DOCUMENT RESUME

ED 434 165 TM 030 213

AUTHOR	Gerald, Debra E.; Hussar, William J.
TITLE	Projections of Education Statistics to 2009.
INSTITUTION	National Center for Education Statistics (ED), Washington, DC.
REPORT NO	NCES-1999-038
PUB DATE	1999-09-00
NOTE	210p.; For previous projections, to 2007 and 2008, see ED 408 367 and ED 421 545 respectively.
AVAILABLE FROM	U.S. Department of Education, ED Pubs, P.O. Box 1398, Jessup, MD 20794-1398; Tel: 877-4ED-PUBS (Toll Free).
PUB TYPE	Numerical/Quantitative Data (110)
EDRS PRICE	MF01/PC09 Plus Postage.
DESCRIPTORS	Census Figures; College Graduates; *Educational Trends; Elementary Secondary Education; *Enrollment Projections; Futures (of Society); High School Graduates; Higher Education; Private Schools; Public Schools; School Demography; *School Statistics; Tables (Data)
IDENTIFIERS	National Center for Education Statistics

ABSTRACT

This report includes statistics on elementary and secondary schools and institutions of higher education at the national level. Included are projections for enrollment, graduates, classroom teachers, and expenditures to the year 2008. In addition, the report includes projections of enrollment in public elementary and secondary schools and high school graduates to the year 2009 at the state level. These projections reflect revisions influenced by the 1990 Census, the 1997 estimates, and the latest assumptions for fertility rate, net immigration, and mortality rate. A methodology section describes models and assumptions used to develop the projections, which are based on a cohort survival model, an age-specific enrollment rate model, exponential smoothing models, and econometric models. Most of the projections include three alternatives, based on different assumptions about growth paths. The first alternative, the middle projection, is considered the most likely. In the forecast summary, key demographic and economic assumptions are presented in chart 1 and selected education statistics are shown in figure 1. Total public and private elementary and secondary enrollment is projected to increase to 54.5 million in 2006 and remain constant through the year 2009. Higher education enrollment, however, is projected to increase by 14%, to 16.3 million, by the year 2009. Four appendixes contain technical information, supplementary tables, remarks on data sources, and a glossary. (Contains 1 chart, 71 figures, 52 tables; 26 methodological tables, and 13 supplementary tables. (SLD)

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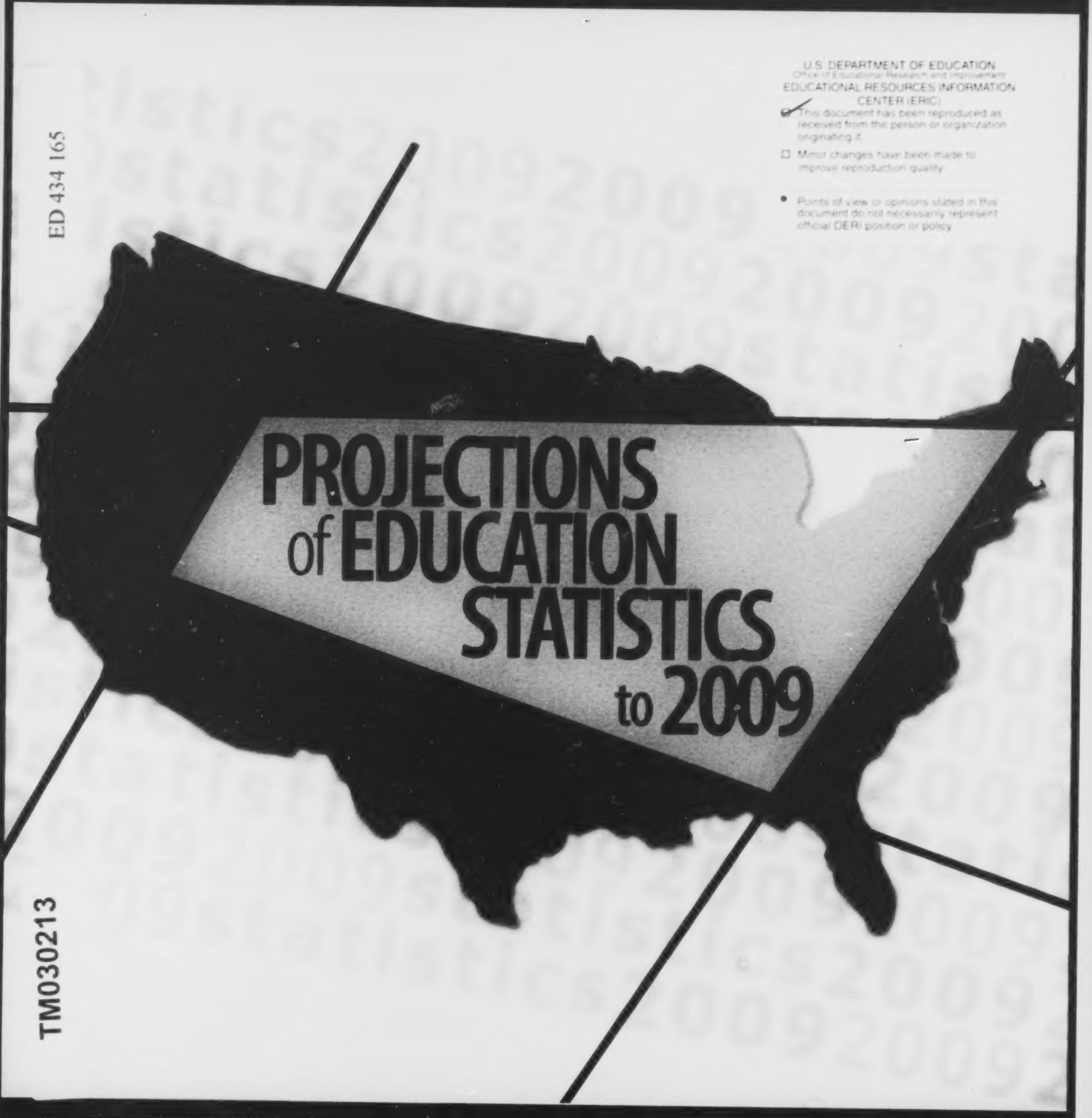

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Projections of Education Statistics to 2009

Debra E. Gerald
William J. Hussar
National Center for Education Statistics

U.S. Department of Education
Office of Educational Research and Improvement NCES 1999-038

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Suggested Citation
U.S. Department of Education. National Center for Education Statistics. *Projections of Education Statistics to 2009,* NCES 1999–038, by Debra E. Gerald and William J. Hussar. Washington, DC: 1999.

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For sale by the U.S. Government Printing Office
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ISBN 0-16-050145-8

Foreword

Projections of Education Statistics to 2009 is the 28th report in a series begun in 1964. This report provides revisions of projections shown in *Projections of Education Statistics to 2008* and includes statistics on elementary and secondary schools and institutions of higher education at the national level. Included are projections for enrollment, graduates, classroom teachers, and expenditures to the year 2009.

In addition, this report includes projections of public elementary and secondary enrollment and high school graduates to the year 2009 at the state level. These projections were produced to provide researchers, policy analysts, and others with state-level projections developed with a consistent methodology. They are not intended to supplant detailed projections prepared in individual states.

The projections presented in this report reflect revisions influenced by the 1990 census. The revised population projections developed by the Bureau of the Census also reflect the incorporation of the 1997 estimates and latest assumptions for the fertility rate, net immigration, and mortality rate.

This report contains a methodology section describing models and assumptions used to develop the national projections. The projections are based on a cohort survival model, an age-specific enrollment rate model, exponential smoothing models, and econometric models. The enrollment rate model uses population estimates and projections from the Bureau of the Census. The exponential smoothing models are based on the mathematical projection of past data patterns into the future. The econometric models use projections of exogenous variables from Standard and Poor's DRI, an economic forecasting service. Therefore, assumptions regarding the population and the economy are the key factors underlying the projections of education statistics.

Most of the projections include three alternatives, based on different assumptions about growth paths. Although the first alternative set of projections (middle alternative) in each table is deemed to represent the most likely projections, the low and high alternatives provide a reasonable range of outcomes.

In the forecast summary, key demographic and economic assumptions are presented in chart 1 and selected education statistics are shown in figure 1. A summary of the projections is available in a pocket-sized folder, *Pocket Projections 2009*.

Martin Orland, Associate Commissioner
Early Childhood, International, and Crosscutting Studies Division
July 1999

Acknowledgments

Projections of Education Statistics to 2009 was produced by the National Center for Education Statistics in the Early Childhood, International, and Crosscutting Studies Division under the general direction of Thomas D. Snyder, Director of the Annual Reports Program. The report was prepared by Debra E. Gerald, Mathematical Statistician, and William J. Hussar, Financial Economist.

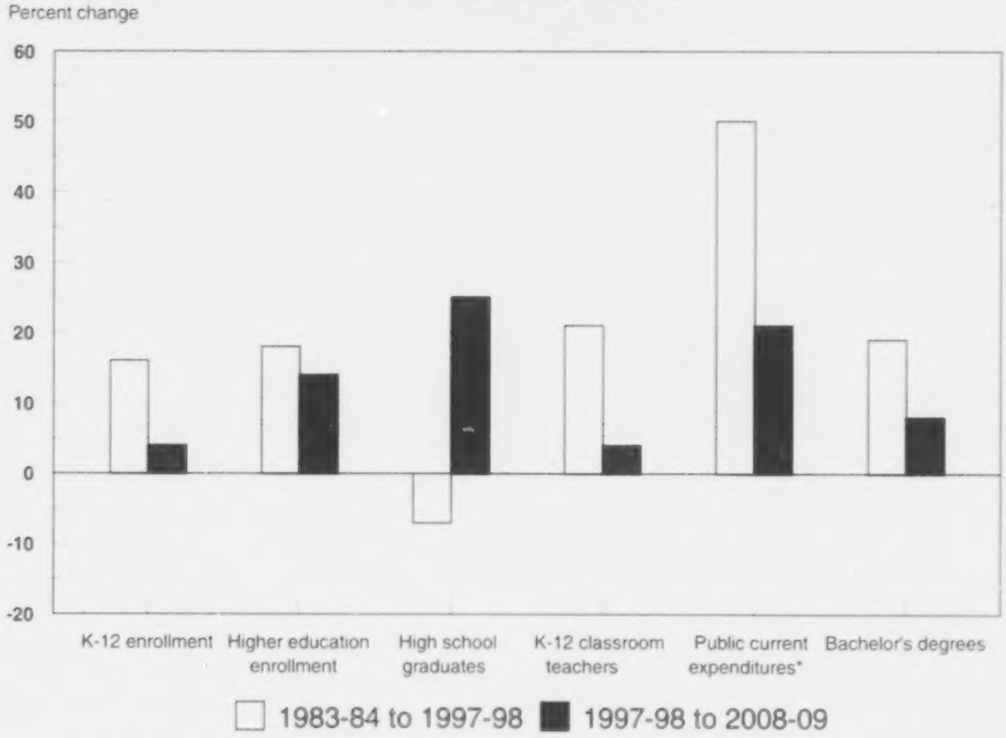
Debra E. Gerald prepared national projections of the following: elementary and secondary enrollment (chapter 1); higher education enrollment (chapter 2); high school graduates (chapter 3); earned degrees conferred (chapter 4); and classroom teachers (chapter 5). She also prepared state-level projections of public elementary and secondary enrollment (chapter 8) and public high school graduates (chapter 9). In addition, she prepared the appendixes explaining the methodologies used to develop these projections and the data sources. William J. Hussar prepared the projections of expenditures of public elementary and secondary schools, including public school teacher salaries (chapter 6) and expenditures of institutions of higher education (chapter 7). In addition, he prepared the appendixes explaining the methodologies used to obtain the expenditure projections, selected portions of the data sources, and glossary.

The technical review was done by Ellen Bradburn of the National Center for Education Statistics. Molly Soule of the Education Statistics Services Institute also provided assistance. The adjudication was done by Marilyn M. McMillen, Chief Statistician of the National Center for Education Statistics. Valuable assistance was also provided by the following reviewers: Chad Fleetwood of the Bureau of Labor Statistics; Vance Grant of the National Library of Education, Office of Educational Research and Improvement; Joe Marks of the Southern Regional Education Board; and William Fowler, Frank Morgan, John Sietsema, and Peter Stowe of the National Center for Education Statistics.

The cover was designed by Mark Ricks of Pinkerton Computer Consultants, Inc.

Forecast Summary

Figure 1
Percent change in selected education statistics: 1983-84 to 1997-98 and 1997-98 to 2008-09



*In constant 1996-1997 dollars

Highlights

National

Over the projection period, growth in the school-age and traditional college-age populations are expected to cause increases in enrollments.

The 5- to 17-year old population is projected to increase from 50.4 million in 1997 to 52.6 million in 2009, an increase of 4 percent. The 18- to 24-year-old population is expected to increase from 25.1 million in 1997 to 29.9 million in 2009, an increase of 19 percent (tables B3 and B4).

Total public and private elementary and secondary enrollment is projected to increase 4 percent over the projection period.

Total public and private elementary and secondary enrollment is projected to increase from 52.2 million in 1997 to 54.5 million in 2006. Then total enrollment is projected to remain steady through the year 2009, resulting in an increase of 4 percent from 1997 (table 1).

Enrollment in higher education is projected to increase 14 percent over the projection period.

Higher education enrollment is projected to increase from an estimated 14.4 million in 1997 to 16.3 million by the year 2009, an increase of 14 percent. A 12-percent increase is projected under the low alternative and a 16-percent increase is projected under the high alternative (table 3).

The number of high school graduates is projected to increase 23 percent over the projection period.

High school graduates from public and private high schools are projected to increase from 2.6 million in 1996–97 to 3.2 million by 2008–09, an increase of 23 percent. This significant increase reflects the projected rise in the 18-year-old population (table 26).

Over the projection period, the number of bachelor's degrees is projected to increase 8 percent.

The number of bachelor's degrees is expected to increase from 1,160,000 in 1996–97 to 1,257,000 by 2008–09, an increase of 8 percent (table 28).

The number of classroom teachers is projected to increase 4 percent over the projection period.

Under the middle alternative, the number of classroom teachers is expected to increase from 3.04 million in 1997 to 3.17 million by the year 2009, an increase of 4 percent. A 2-percent increase is projected under the low alternative and a 7-percent increase is projected under the high alternative (table 32).

Current expenditures for public elementary and secondary schools are forecast to increase 25 percent from 1995–96 to 2008–09 in constant dollars.

Under the middle alternative, a 25-percent increase in current expenditures for public elementary and secondary schools is projected for the period from 1995–96 to 2008–09. Under the low alternative, current expenditures are projected to increase by 17 percent; under the high alternative, current expenditures are projected to increase by 32 percent (table 34).

Current expenditures per pupil are forecast to increase 16 percent for the period 1995–96 to 2008–09 in constant dollars.

Under the middle alternative, current expenditures per pupil in average daily attendance are forecast to increase 16 percent in constant dollars from 1995–96 to 2008–09. Under the low alternative, current expenditures per pupil are projected to increase 9 percent and under the high alternative, current expenditures per pupil are projected to increase 23 percent (table 34).

Teacher salaries are projected to increase 1 percent in constant dollars between 1996–97 and 2008–09.

Under the middle alternative, teacher salaries are projected to increase 1 percent in constant dollars between 1996–97 and 2008–09. A 2-percent decline is projected under the low alternative and a 3-percent increase is projected under the high alternative (table 36).

Current-fund expenditures are projected to increase in constant dollars in both public and private institutions.

Total current-fund expenditures of institutions of higher education are projected to increase 36 percent in constant dollars under the middle alternative from 1995–96 to 2008–09. Total current-fund expenditures are projected to increase at almost the same rate in public institutions and private institutions. A 36-percent increase is projected for public institutions and a 35-percent increase is projected for private institutions (table 37).

State-Level

Public elementary and secondary school enrollment (kindergarten through grade 12) is expected to increase between 1997 and the year 2009, but these increases will vary by region.

Enrollment will increase most rapidly in the West, where total enrollment is expected to rise 11 percent. Enrollment in the South is projected to increase by 5 percent. The Northeast is expected to decrease by 2 percent, while the Midwest is projected to decrease by 1 percent (table 46).

Changes in public school enrollment are projected to range from increases of 20 percent or more in some states to decreases in other states between 1997 and 2009.

Public school enrollment is projected to increase 4 percent between 1997 and the year 2009. The largest increases are expected in Arizona (21 percent), Idaho (20 percent), and Nevada (28 percent). The largest decreases are expected in the District of Columbia (10 percent), Maine (9 percent), North Dakota (8 percent), and West Virginia (7 percent) (table 46).

Growth in the number of graduates from public schools will vary by region.

The number of public high school graduates is projected to increase 23 percent between 1996–97 and 2008–09. Across regions, the West is expected to rise by 35 percent. The Northeast is projected to grow by 20 percent. The South and Midwest are expected to increase by 24 percent and 13 percent, respectively, over the projection period (table 52).

Increases in the number of public high school graduates are projected for most states.

Between 1996–97 and 2008–09, sizable increases are expected in Arizona (76 percent), California (41 percent), Florida (45 percent), North Carolina (48 percent), and Nevada (103 percent). Decreases are projected for the District of Columbia (5 percent), Louisiana (5 percent), North Dakota (8 percent), West Virginia (7 percent), and Wyoming (15 percent) (table 52).

Chart 1.—Summary of forecast assumptions to 2009

Variable	Middle alternative	Low alternative	High alternative
Demographic Assumptions			
Population	Projections are consistent with the Census Bureau middle series estimates, which assume a fertility rate of 2.10 births per woman by the year 2009, a net immigration of 820,000 per year, and a further reduction in the mortality rate.	Same as middle alternative	Same as middle alternative
18-24 year-old population	Average annual growth rate of 1.5%	Same as middle alternative	Same as middle alternative
25-29 year-old population	Average annual growth rate 0.3%	Same as middle alternative	Same as middle alternative
30-34 year-old population	Average annual decline of 1.1%	Same as middle alternative	Same as middle alternative
35-44 year-old population	Average annual decline of 1.0%	Same as middle alternative	Same as middle alternative
Public elementary enrollment	Average annual growth rate of 0.02%	Same as middle alternative	Same as middle alternative
Public secondary enrollment	Average annual growth rate of 0.9%	Same as middle alternative	Same as middle alternative
Undergraduate enrollment	Average annual growth rate of 1.2%	Average annual growth rate of 1.0%	Average annual growth rate of 1.4%
Graduate enrollment	Average annual growth rate of 0.2%	Average annual growth rate of 0.1%	Average annual growth rate of 0.4%
First-professional enrollment	Average annual growth rate of 0.1%	Average annual growth rate of 0.0%	Average annual growth rate of 0.4%
Full-time-equivalent enrollment	Average annual growth rate of 1.3%	Average annual growth rate of 1.1%	Average annual growth rate of 1.5%
Economic Assumptions			
Disposable income per capita in constant dollars	Annual percent changes range between 0.8% and 3.4% with an annual compound growth rate of 1.4%.	Annual percent changes range between 0.0% and 2.8% with an annual compound growth rate of 0.9%.	Annual percent changes range between 1.4% and 4.1% with an annual compound growth rate of 1.9%.
Education revenue receipts from state sources per capita in constant dollars	Annual percent changes range between 0.0% and 1.6% with an annual compound growth rate of 0.6%.	Annual percent changes range between -0.6% and 1.0% with an annual compound growth rate of 0.1%.	Annual percent changes range between -0.3% and 3.2% with an annual compound growth rate of 1.1%.
Inflation rate	Inflation rate ranges between 2.1% and 3.5%.	Inflation rate ranges between 3.2% and 5.0%.	Inflation rate ranges between 1.3% and 2.4%.
Personal taxes and nontax receipts to state and local governments per capita in constant dollars	Annual percent changes range between -2.3% and 2.3% with an annual compound growth rate of 0.6%.	Annual percent changes range between -3.0% and 0.7% with an annual compound growth rate of -0.2%.	Annual percent changes range between -1.5% and 4.4% with an annual compound growth rate of 1.4%.
Sum of personal taxes and nontax receipts and indirect business taxes and tax accruals (excluding property taxes) to state and local governments per capita in constant dollars	Annual percent changes range between -1.0% and 1.9% with an annual compound growth rate of 0.8%.	Annual percent changes range between -1.6% and 0.8% with an annual compound growth rate of 0.2%.	Annual percent changes range between -0.3% and 3.4% with an annual compound growth rate of 1.4%.
Unemployment Rate (Men)			
Age 18 to 19	Remains between 14.4% and 17.7%.	Remains between 14.4% and 20.2%.	Remains between 13.7% and 17.4%
Age 20 to 24	Remains between 8.6% and 10.1%.	Remains between 8.6% and 12.1%.	Remains between 7.5% and 9.8%.
Age 25 & over	Remains between 3.3% and 4.5%.	Remains between 3.3% and 5.6%.	Remains between 3.0% and 4.3%.
Unemployment Rate (Women)			
Age 18 to 19	Remains between 12.0% and 13.8%.	Remains between 12.0% and 15.4%.	Remains between 11.5% and 13.5%.
Age 20 to 24	Remains between 7.8% and 9.1%.	Remains between 7.8% and 10.3%.	Remains between 7.5% and 8.9%.
Age 25 & over	Remains between 3.7% and 4.3%.	Remains between 3.7% and 5.1%.	Remains between 3.4% and 4.2%.

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Introduction

Guide to This Edition

This edition of *Projections of Education Statistics to 2009* provides projections for key education statistics. This edition includes statistics on enrollment, graduates, classroom teachers, and expenditures in elementary and secondary schools and institutions of higher education. For the Nation, the tables, figures, and text contain data on enrollment, teachers, graduates, and expenditures for the past 14 years and projections to the year 2009. For the 50 States and the District of Columbia, the tables, figures, and text contain data on projections of public school elementary and secondary enrollment and public high school graduates to the year 2009. Similar methodologies were used to obtain a uniform set of projections for the 50 states and the District of Columbia. These projections are further adjusted to agree with the national projections of public elementary and secondary school enrollment and public high school graduates appearing in this report. These projections reflect 1997 estimates and population projections based on the 1990 census. Appendix A describes the methodology and assumptions used to develop the projections. Appendix B contains tables of supplementary data. Data sources are presented in appendix C. Appendix D is a glossary of terms.

Limitations of Projections

Projections of time series usually differ from the final reported data due to errors from many sources. This is because of the inherent nature of the statistical universe from which the basic data are obtained and the properties of projection methodologies, which depend on the validity of many assumptions. Therefore, alternative projections are shown for most statistical series to denote the uncertainty involved in making projections. These alternatives are not statistical confidence limits, but instead represent judgments made by the authors as to reasonable upper and lower bounds. Alternative projections are presented for higher education enrollment, classroom teachers, and expenditures of public elementary and secondary schools and institutions of higher education.

Chapter 1

Elementary and Secondary Enrollment

Between 1997 and the year 2009, enrollment will increase in elementary and secondary schools. The primary reason for the increase is the rising number of annual births between 1977 and 1990—sometimes referred to as the baby boom echo (table B1 and figure 2). After a period of stability and small declines, the number of births is expected to begin rising again after the turn of the century. Reflecting this, the 3- to 5-year-old population is projected to decline 3 percent by 2005 and then increase 2 percent by 2009 (table B2 and figure 3.) Growth in the school-age populations is expected over the next 12 years (table B3 and figures 4 and 5). In 1997 and beyond, increases in the 5- to 13-year-old population are expected to cause rises in elementary enrollment through the year 2002. Over the projection period, the increase in the 14- to 17-year-old population, which started in 1991, will continue to influence the growth in secondary enrollment through 2007.

Projections of public elementary and secondary enrollment that have been produced over the last 15 years are more accurate than projections of public high school graduates and public classroom teachers that NCES has published over the same time period. For more information, see appendix A1, page 126.

Elementary and Secondary Enrollment

In response to an increase in the 5- to 17-year-old population, total enrollment in public and private elementary and secondary schools increased from 44.9 million in 1984 to 52.2 million in 1997, an increase of 16 percent (table 1 and figure 6). Total enrollment is projected to increase for most of the projection period, reaching 54.2 million by the year 2009, an increase of 4 percent from 1997.

Enrollment, by Grade Group

Enrollments may also be grouped or summed by any span of grades. In this section, past and projected trends of enrollment in grades K-8 and 9-12 are examined. Enrollment in grades K–8 increased from 31.2 million in 1984 to 37.7 million in 1997, an increase of 21 percent. Enrollment in grades K–8 is projected to increase to 38.7 million in 2002 and 2003. Then, it is expected to decline slightly to 38.0 million by the year 2009, still reflecting an increase of 1 percent from 1997. Enrollment in grades 9–12 decreased from 13.7 million in 1984 to 12.5 million in 1990, a decrease of 9 percent. It then increased to 14.4 million in 1997. By the year 2009, enrollment in grades 9–12 is projected to rise for most of the projection period to 16.2 million, an increase of 12 percent from 1997. Since enrollment rates for the school-age populations are nearly 100 percent for elementary grades and junior-high grades and close to 90 percent for high school grades, the historical and projected patterns of decline and growth in enrollment in grades K–8 and grades 9–12 reflect changes in the sizes of the 5- to 13-year-old population and the 14- to 17-year-old population.

Enrollment, by Control of School

Enrollment in public elementary and secondary schools increased from 39.2 million in 1984 to an estimated 46.3 million in 1997, an increase of 18 percent (figure 7). Enrollment in public schools is projected to increase to 48.1 million by the year 2009, an increase of 4 percent from 1997.

Projections of enrollments in public elementary and secondary schools are based on projected grade retention rates. The retention rates for grades 2 through 10 are all close to 100 percent. Rates for grade 6 to grade 7 and grade 8 to grade 9 are significantly over 100 percent. Traditionally, these are the grades in which large numbers of private elementary students transfer to public secondary schools. The retention rates for grades 11 to 12 are about 90 percent. The grade retention rates are assumed to be constant throughout the projection period.

Since the mid-1980s, enrollment in private elementary and secondary schools has fluctuated between 5.2 million and 5.9 million. In 1997, an estimated 5.9 million students were enrolled in private elementary and secondary schools. Enrollment in private schools is projected to increase to around 6.0 million by the year 2009, an increase of 3 percent from 1997.

Projections of private school enrollment were derived using public school enrollment data. From 1970 to 1996, the ratio of private school enrollment to public school enrollment was calculated for grades K–8 and grades 9–12. These ratios were projected using single exponential smoothing, yielding a constant value over the projection period. This constant was applied to projections of public school enrollment for grades K–8 and 9–12 to yield projections of private school enrollment by grade group. By organizational level, it was assumed that enrollment for grades K–8 was equal to elementary enrollment and enrollment for grades 9–12 was equal to secondary enrollment.

This method assumes that the future pattern in the trend of private school enrollment will be the same as that in public school enrollment. A number of factors could alter the assumption of a constant ratio over the projection period. For more information, see appendix A, section A.1. However, the historical relationships between public and private schools have been stable.

Enrollment, by Grade Group and Control of School

Enrollment by grade group in public elementary and secondary schools shows trends similar to those of total enrollment. Enrollment in grades K–8 of public schools increased from 26.9 million in 1984 to 33.2 million in 1997. Enrollment in grades K–8 of public schools is projected to increase to 34.1 million in 2002. Then, it is expected to decrease to 33.4 million by the year 2009, still an increase of 1 percent from 1997. Enrollment in grades 9–12 of public schools decreased from 12.3 million in 1984 to 11.3 million in 1990, a decrease of 8 percent. Then, it increased to 13.1 million in 1997. Thereafter, 9–12 enrollment is expected to increase to 14.9 million by the year 2007, and then slightly drop to 14.7 million by 2009, showing an overall increase of 12 percent from 1997. For information on projections of enrollment by grade in public elementary and secondary schools, see table B13 in appendix B, Supplementary Tables.

Enrollment by grade group in private elementary and secondary schools will show patterns similar to those in public schools since the private school enrollment projection methodology assumes that private school enrollment will reflect trends in public school enrollment. Enrollment in grades K–8 of private schools is projected to increase from an estimated 4.6 million in 1997 to 4.7 million in 2002 and then decline to 4.6 million in 2009, an increase of 1 percent from 1997. Enrollment in grades 9–12 of private schools is projected to increase from an estimated 1.3 million in 1997 to 1.5 million by the year 2009, an increase of 12 percent.

Enrollment, by Organizational Level

According to the Common Core of Data survey, elementary level is composed of any span of grades not above grade 8; secondary level is composed of grades beginning with the next grade following the elementary grades and ending with or below grade 12. Enrollments may also be aggregated by the level of school attended by students. The reported enrollment in elementary schools is smaller than enrollment in kindergarten through grade 8 because it excludes enrollment in grades 7 and 8 in secondary schools. Enrollment in elementary schools increased from 28.0 million in 1984 to 34.7 million in 1997, an increase of 24 percent (table 2). Enrollment in elementary schools is expected to continue to increase to 35.5 million in the year 2001, before declining to 34.8 million by the year 2009. Enrollment in secondary schools, including 7th and 8th graders in secondary schools, decreased from 16.9 million in 1984 to 15.3 million in 1990, a decrease of 9 percent. Then, this number increased by 14 percent to 17.4 million in 1997. Enrollment in secondary schools is projected to rise to 19.6 million by 2007 and then decrease to 19.3 million in 2009, an increase of 11 percent from 1997.

Figure 2
Annual number of births, with projections: 1949 to 2009

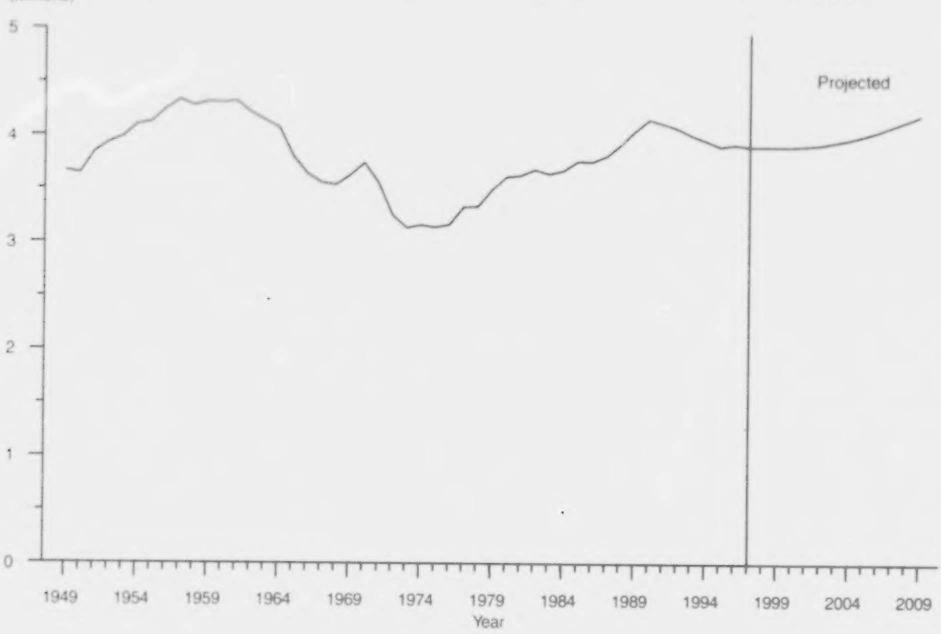

Figure 3
3- to 5-year-old population, with projections: 1984 to 2009

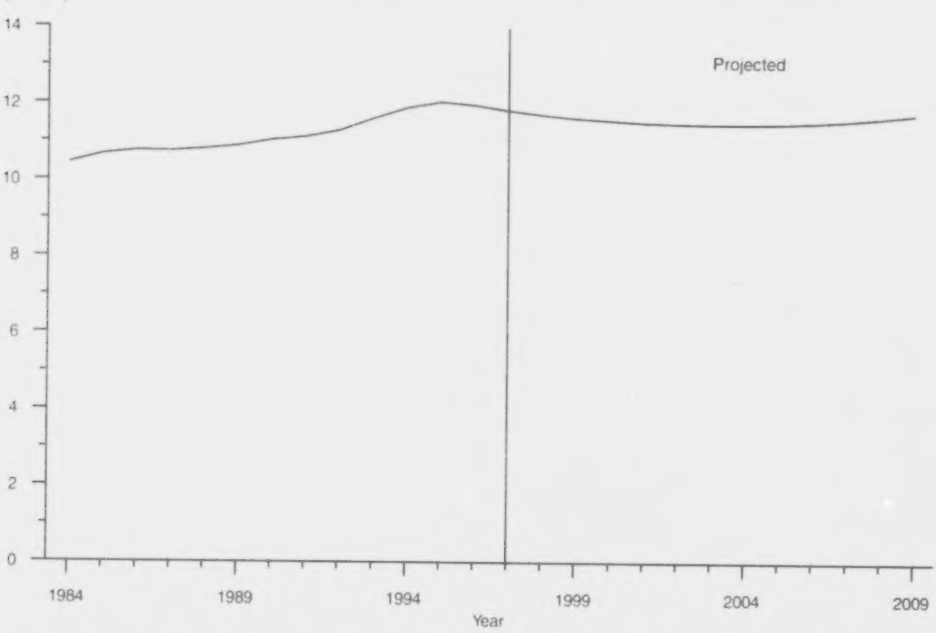

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Figure 4
5- to 17-year-old population, with projections: 1984 to 2009

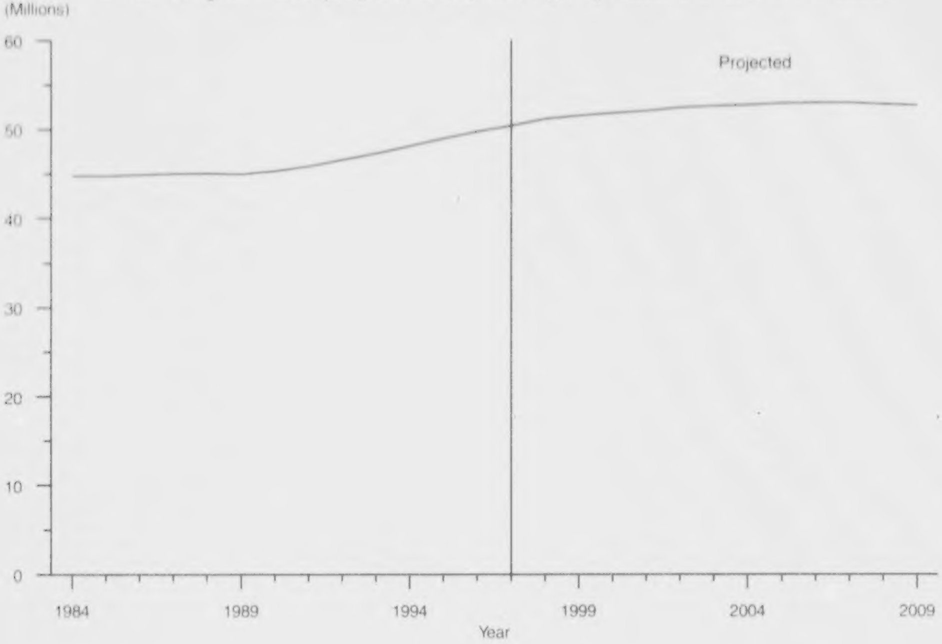

Figure 5
School-age populations, with projections: 1984 to 2009

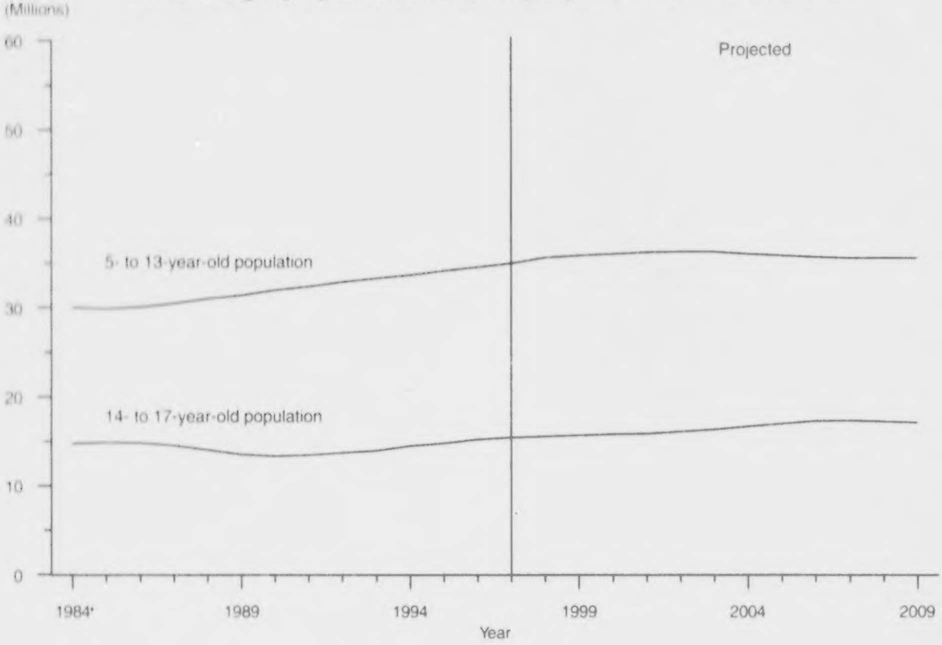

Figure 6

Enrollment in elementary and secondary schools, by grade level, with projections: Fall 1984 to fall 2009

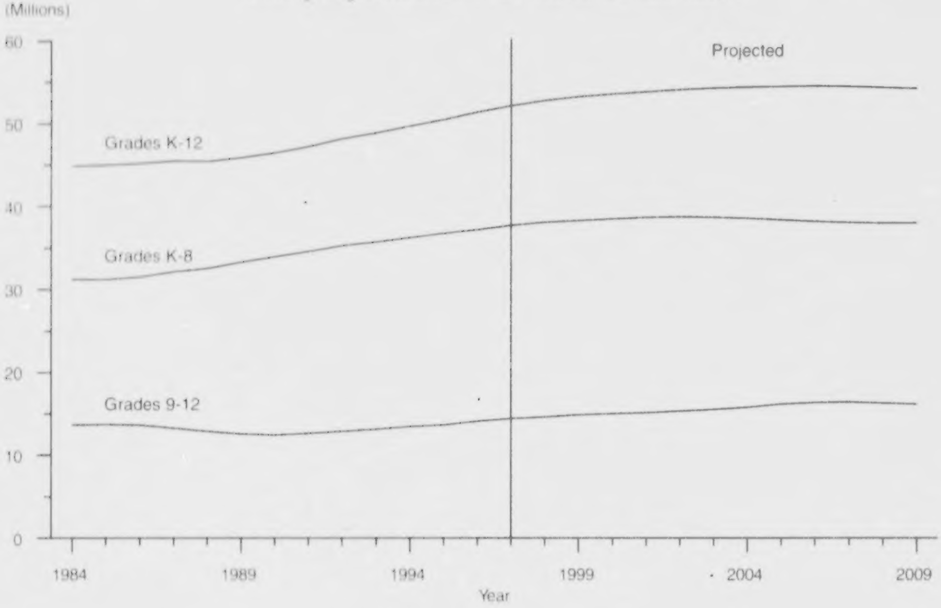

Figure 7

Enrollment in elementary and secondary schools, by control of institution, with projections: Fall 1984 to fall 2009

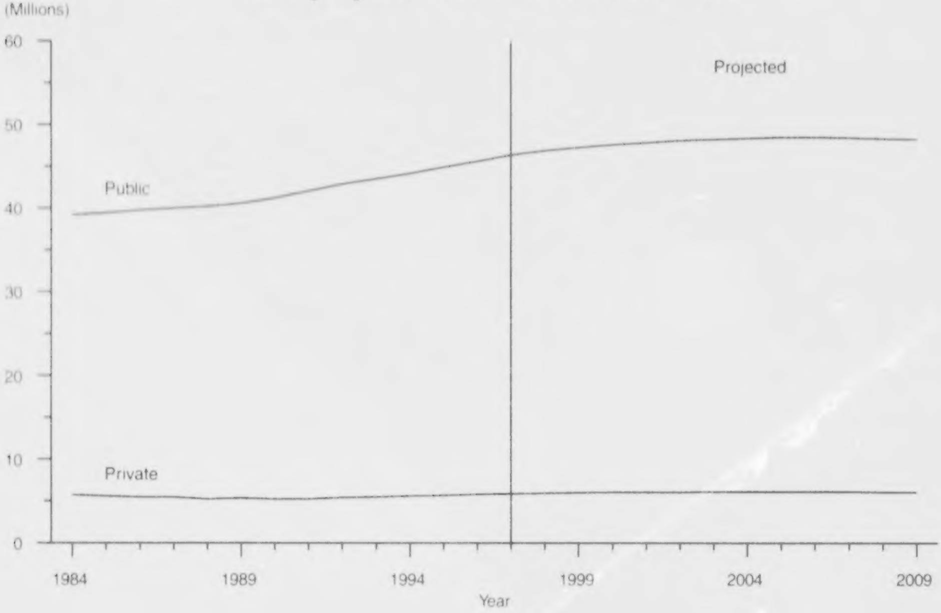

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Table 1.—Enrollment in grades K–8 [1] and 9–12 of elementary and secondary schools, by control of institution, with projections: Fall 1984 to fall 2009

(In thousands)

Year	Total			Public			Private		
	K–12 [1]	K–8 [1]	9–12	K–12 [1]	K–8 [1]	9–12	K–12 [1]	K–8 [1]	9–12
1984	44,908	31,205	13,704	39,208	26,905	12,304	[2]5,700	[2]4,300	[2]1,400
1985	44,979	31,229	13,750	39,422	27,034	12,388	5,557	4,195	1,362
1986	45,205	31,536	13,669	39,753	27,420	12,333	[2]5,452	[2]4,116	[2]1,336
1987	45,488	32,165	13,323	40,008	27,933	12,076	[2]5,479	[2]4,232	[2]1,247
1988	45,430	32,537	12,893	40,189	28,501	11,687	[3]5,241	[3]4,036	[3]1,206
1989	45,898	33,314	12,583	40,543	29,152	11,390	[3]5,355	[3]4,162	[3]1,193
1990	46,448	33,973	12,475	41,217	29,878	11,338	[3]5,232	[3]4,095	[3]1,137
1991	47,246	34,580	12,666	42,047	30,506	11,541	[3]5,199	[3]4,074	[3]1,125
1992	48,198	35,300	12,898	42,823	31,088	11,735	[3]5,375	[3]4,212	[3]1,163
1993	48,936	35,784	13,152	43,465	31,504	11,961	[4]5,471	[4]4,280	[4]1,191
1994	49,707	36,258	13,449	44,111	31,898	12,213	[4]5,596	[4]4,360	[4]1,236
1995	50,502	36,806	13,697	44,840	32,341	12,500	5,662	4,465	1,197
1996	51,375	37,245	14,131	45,592	32,759	12,834	[4]5,783	[4]4,486	[4]1,297
1997[4]	52,182	37,737	14,445	46,323	33,185	13,137	5,860	4,552	1,308
					Projected				
1998	52,768	38,110	14,658	46,844	33,514	13,330	5,924	4,597	1,327
1999	53,215	38,323	14,891	47,244	33,701	13,543	5,971	4,622	1,348
2000	53,539	38,521	15,018	47,533	33,875	13,658	6,006	4,646	1,360
2001	53,821	38,683	15,138	47,785	34,018	13,767	6,036	4,666	1,371
2002	54,071	38,749	15,322	48,010	34,075	13,935	6,061	4,674	1,387
2003	54,228	38,703	15,525	48,154	34,035	14,119	6,074	4,668	1,406
2004	54,369	38,561	15,808	48,286	33,910	14,376	6,082	4,651	1,431
2005	54,477	38,348	16,129	48,392	33,723	14,669	6,086	4,625	1,461
2006	54,500	38,152	16,348	48,418	33,550	14,868	6,082	4,602	1,480
2007	54,435	38,044	16,391	48,362	33,455	14,907	6,073	4,589	1,484
2008	54,316	38,005	16,310	48,255	33,421	14,833	6,061	4,584	1,477
2009	54,174	38,012	16,163	48,126	33,427	14,699	6,048	4,585	1,464

[1] Includes most kindergarten and some nursery school enrollment.

[2] Estimated on the basis of past data.

[3] Estimate is from the Early Estimates survey.

[4] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; *Private School Universe Survey, 1995–96*; and National Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

Table 2.—Enrollment in elementary and secondary schools, by organizational level and control of institution, with projections: Fall 1984 to fall 2009

(In thousands)

Year	Total			Public			Private		
	K-12 [1]	Elementary	Secondary	K-12 [1]	Elementary	Secondary	K-12 [1]	Elementary	Secondary
1984	44,908	28,042	16,866	39,208	23,742	15,466	[2]5,700	[2]4,300	[2]1,400
1985	44,979	28,330	16,649	39,422	24,135	15,287	5,557	4,195	1,362
1986	45,205	28,613	16,592	39,753	24,497	15,256	[2]5,452	[2]4,116	[2]1,336
1987	45,488	29,447	16,040	40,008	25,215	14,793	[2]5,479	[2]4,232	[2]1,247
1988	45,430	29,776	15,654	40,189	25,740	14,448	[3]5,241	[3]4,036	[3]1,206
1989	45,898	30,570	15,328	40,543	26,408	14,135	[3]5,355	[3]4,162	[3]1,193
1990	46,448	31,145	15,304	41,217	27,050	14,167	[3]5,232	[3]4,095	[3]1,137
1991	47,246	31,669	15,577	42,047	27,595	14,452	[3]5,199	[3]4,074	[3]1,125
1992	48,198	32,317	15,881	42,823	28,105	14,718	[3]5,375	[3]4,212	[3]1,163
1993	48,936	32,806	16,130	43,465	28,526	14,939	[4]5,471	[4]4,280	[4]1,191
1994	49,707	33,310	16,397	44,111	28,950	15,161	[4]5,596	[4]4,360	[4]1,236
1995	50,502	33,894	16,608	44,840	29,429	15,411	5,662	4,465	1,197
1996	51,375	34,409	16,966	45,592	29,923	15,669	[4]5,783	[4]4,486	[4]1,297
1997[4]	52,182	34,733	17,449	46,323	30,181	16,141	5,860	4,552	1,308
					Projected				
1998	52,768	35,069	17,699	46,844	30,473	16,371	5,924	4,597	1,327
1999	53,215	35,277	17,937	47,244	30,655	16,589	5,971	4,622	1,348
2000	53,539	35,438	18,101	47,533	30,792	16,741	6,006	4,646	1,360
2001	53,821	35,532	18,290	47,785	30,866	16,919	6,036	4,666	1,371
2002	54,071	35,525	18,546	48,010	30,852	17,158	6,061	4,674	1,387
2003	54,228	35,419	18,810	48,154	30,751	17,404	6,074	4,668	1,406
2004	54,369	35,254	19,114	48,286	30,604	17,683	6,082	4,651	1,431
2005	54,477	35,075	19,403	48,392	30,449	17,942	6,086	4,625	1,461
2006	54,500	34,926	19,575	48,418	30,324	18,094	6,082	4,602	1,480
2007	54,435	34,844	19,591	48,362	30,255	18,107	6,073	4,589	1,484
2008	54,316	34,822	19,494	48,255	30,238	18,017	6,061	4,584	1,477
2009	54,174	34,844	19,330	48,126	30,259	17,867	6,048	4,585	1,464

[1] Includes most kindergarten and some nursery school enrollment.

[2] Estimated on the basis of past data.

[3] Estimate is from the Early Estimates survey.

[4] Projected.

NOTE: Historical numbers may differ from those in previous editions. For private schools, it was assumed that numbers for elementary are the same as those in table 1 for grades K-8, and numbers for secondary are the same as those in table 1 for grades 9-12. Designation of grades as elementary or secondary varies from school to school. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988-89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1989-90," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990-91," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1991-92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992-93," *Early Estimates*; *Private School Universe Survey, 1995-96*; and National Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

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Chapter 2

Higher Education Enrollment

Enrollment in institutions of higher education* is expected to rise between 1997 and the year 2009. Changes in age-specific enrollment rates and college-age populations will affect enrollment levels over the next 12 years (figures 8 and 9). The most important factor in the projected rise of college enrollment is the projected increase of 19 percent in the traditional college-age population of 18- to 24-year-olds (table B4). The 25- to 29-year-old population is projected to decrease by 9 percent between 1997 and 2002, and then increase by 14 percent between 2002 and 2009. The 30- to 34-year-old population will decrease by 12 percent between 1997 and 2009. The 35- to 44-year-old population will increase by 2 percent between 1997 and 1999, and then decrease by 12 percent between 1999 and 2009. The increases in the younger population are expected to offset the loss of students from the older populations, thereby contributing to the increases in college enrollment over the projection period. The enrollment projections do not take into account such factors as the cost of a college education, the economic value of an education, and the impact of long distance learning due to technological changes. Projections of higher education enrollment that have been produced over the past 12 years are more accurate than projections of master's degrees and doctor's degrees, but less accurate than projections of public elementary and secondary enrollment that NCES has published over the same time period. For more information, see appendix A1, page 126.

Total Higher Education Enrollment

In 1984 and 1985, college enrollment stood at 12.2 million. Then it increased, reaching 14.5 million in 1992. By 1997, it had decreased to an estimated 14.4 million (table 3 and figure 10). Under the middle alternative, college enrollment is projected to rise to 16.3 million by the year 2009, an increase of 14 percent from 1997. This will represent an average annual growth rate of 1.1 percent over the projection period. Between 1997 and 2003, college enrollment is projected to increase at an average annual growth rate of 1.0 percent. Between 2003 and 2009, it will grow at an average annual growth rate of 1.1 percent (figure 11). The 18- to 24-year-old population is projected to increase 19 percent by the year 2009. This increase in the younger population is expected to offset the expected decline in the number of 25- to 34-year-olds enrolled in college.

The following tabulations show key enrollment statistics: (1) the average annual rate of growth (in percent) for 1984–97 and alternative projected rates of change for 1997–2009 and (2) average annual rates of change for 1984–91 and 1991–97 and the middle alternative projected rates of change for 1997–2003 and 2003–2009. (Calculations are based on unrounded numbers. A percent of 0.0 indicates that the number is between 0.0 and 0.05.)

Average annual rate of change (in percent)

	1984–97	Projected 1997–2009		
		Low	Middle	High
Total	1.3	0.9	1.1	1.2
Men	0.6	0.7	0.8	0.9
Women	1.8	1.1	1.3	1.5
Full-time	1.0	1.3	1.5	1.7
Part-time	1.5	0.3	0.5	0.7
Public	1.3	0.9	1.1	1.2
Private	1.1	1.0	1.1	1.3
4-year	1.0	1.0	1.1	1.3
2-year	1.6	0.8	0.9	1.1
Undergraduate	1.2	1.0	1.2	1.4
Graduate	2.0	0.1	0.2	0.4
First-professional	0.2	0.0	0.1	0.4
Full-time-equivalent	1.1	1.1	1.3	1.5

Average annual rate of change (in percent)

(Middle alternative projections)

	1984–91	1991–97	Projected	
			1997–2003	2003–2009
Total	2.3	0.0	1.0	1.1
Men	1.5	-0.5	0.6	1.0
Women	3.0	0.5	1.3	1.2
Full-time	1.9	0.0	1.3	1.6
Part-time	2.8	0.1	0.5	0.5
Public	2.6	-0.1	1.0	1.1
Private	1.4	0.7	1.0	1.2
4-year	1.8	0.2	1.1	1.2
2-year	3.2	-0.2	0.9	1.0
Undergraduate	2.3	-0.1	1.2	1.2
Graduate	2.9	1.0	0.0	0.5
First-professional	0.1	0.3	-0.7	0.9
Full-time-equivalent	2.1	0.0	1.2	1.4

Under the low alternative, college enrollment is projected to increase from an estimated 14.4 million in 1997 to 16.0 million by the year 2009. This will represent an average annual growth rate of 0.9 percent, for an increase of 12 percent over the projection period.

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*This term applies mainly to those institutions that provide study beyond secondary school and that offer programs terminating in an associate, baccalaureate, or higher degree.

Under the high alternative, college enrollment is expected to increase from an estimated 14.4 million in 1997 to 16.7 million by the year 2009. This will represent an average annual growth rate of 1.2 percent, for an increase of 16 percent over the projection period.

Higher education enrollment projections were based on projected enrollment rates, by age and sex, which were then applied to population projections by age and sex developed by the Bureau of the Census. The middle series population projections, which assume middle fertility and net immigration, were used. The age-specific enrollment rates by sex and attendance status were projected based on an econometric estimation of relationships to relevant macroeconomic variables such as income and unemployment rates, proxies for relative earnings, by age group.

Alternative Projections Based on Three Economic Scenarios

Three sets of projections are presented for enrollment in institutions of higher education to indicate a range of possible outcomes. Each set of projections is based on alternative assumptions concerning the economy. The middle, low, and high alternatives of college enrollment are based on the base, pessimistic and optimistic scenarios of the economy developed by Standard & Poor's DRI for the projections of disposable income and unemployment rates. Under the three alternatives, full-time and part-time enrollment rates by age of men and women are modeled. The age-specific enrollment rates of men and women enrolled full-time are a function of dummy variables by age, log of four-period weighted average of real disposable income per capita, and log unemployment rate by age group. The age-specific enrollment rates of men and women enrolled part-time are a function of dummy variables by age and log of four-period weighted average of real disposable income per capita. These relationships will continue through 2009. For more information, see appendix A, section A.1.

The key determinants of higher education enrollment are household income, which represents ability to pay, and an age-specific unemployment rate, which acts as a proxy for opportunity costs faced by students. Both of these measures are likely to decline during a weak or pessimistic economy, with the result that the estimated opportunity costs will be lower. This will have a positive impact on higher education enrollment, as students face less attractive alternatives. This will be apparent in the short term, resulting in a potential reversal in the expected pattern across the alternative economic scenarios. As a result, the high alternative projections will be lower than the low alternative projections. However, in the long term, the effect of the per capita income variable dominates the effects of the unemployment rate. As expected, this results in a pattern where the high alternative projections are greater than the low alternative projections.

Enrollment, by Sex of Student

Women played a major role in the increase of enrollment between 1984 and 1997. The enrollment of women in college increased from 6.4 million in 1984 to an estimated 8.1 million in 1997, representing an average annual growth rate of 1.8 percent, for a 27-percent increase over the period (figure 12). Under the middle alternative, enrollment of women is expected to increase to 9.4 million by the year 2009, an increase of 16 percent from 1997. This will represent a growth rate of 1.3 percent per year. The rate of growth will be about the same during the first half of the projection period (1997–2003) and the second half (2003–2009), 1.3 percent per year versus 1.2 percent per year (figure 13). As a share of total college enrollment, women were 56 percent of all college students in 1997 compared with 52 percent in 1984. Women are expected to increase their share to 58 percent of college enrollment in the year 2009. Under the low alternative, enrollment of women is expected to increase from 8.1 million in 1997 to 9.2 million by the year 2009, representing a growth rate of 1.1 percent per year. Under the high alternative, enrollment of women is expected to increase from 8.1 million in 1997 to 9.7 million by the year 2009, representing a growth rate of 1.5 percent per year.

The enrollment of men in college increased from 5.9 million in 1984 to 6.5 million in 1992, before decreasing to an estimated 6.3 million in 1997. Under the middle alternative, enrollment of men is expected to increase to 6.9 million by the year 2009, a 10-percent increase from 1997, for an average annual growth rate of 0.8 percent. Under the low alternative, enrollment of men is expected to increase from 6.3 million in 1997 to about 6.9 million by the year 2009, representing a growth rate of 0.7 percent per year. Under the high alternative, enrollment of men is expected to increase from 6.3 million in 1997 to 7.0 million by the year 2009, representing a growth rate of 0.9 percent per year.

Enrollment, by Attendance Status

Full-time enrollment increased from 7.1 million in 1984 to an estimated 8.1 million in 1997 (figure 14). This is an average annual growth rate of 1.0 percent, for an increase of 14 percent over the period. Under the middle alternative, full-time enrollment is expected to increase another 19 percent to 9.7 million by the year 2009, representing an average annual growth rate of 1.5 percent. Over the projection period, the growth rate for the 1997–2003 period will be lower than the growth rate for the 2003–2009 period, 1.3 percent per year versus 1.6 percent per year (figure 15). Under the low alternative, full-time enrollment is expected to increase from 8.1 million in 1997 to 9.5 million by the year 2009, representing a growth rate of 1.3 percent per year. Under the high alternative, full-time enrollment is expected to increase from 8.1 million in 1997 to 9.9 million by the year 2009, representing a growth rate of 1.7 percent per year. Full-time enrollment is expected to rise at a faster rate over the next 12 years than part-time enrollment. This changing pattern is driven by the influx of young traditional college-age students who tend to go to college full-time.

Part-time enrollment increased from 5.1 million in 1984 to an estimated 6.3 million in 1997. This is an average annual growth rate of 1.5 percent, for an increase of 22 percent over the period. Under the middle alternative, part-time enrollment is expected to increase at an average annual growth rate of 0.5 percent and reach 6.7 million by the year 2009, for an increase of 6 percent over the projection period. The growth rate for part-time enrollment during the 1997–2003 period will be the same as the growth rate for the 2003–2009 period, 0.5 percent. Under the low alternative, part-time enrollment is expected to increase from 6.3 million in 1997 to 6.5 million by the year 2009, representing a growth rate of 0.3 percent per year. Under the high alternative, part-time enrollment is expected to increase from 6.3 million in 1997 to 6.8 million by the year 2009, representing a growth rate of 0.7 percent per year.

Enrollment, by Control of Institution

Enrollment in public institutions grew from 9.5 million in 1984 to an estimated 11.2 million in 1997, increasing at an average annual rate of 1.3 percent, for an increase of 18 percent over the period (figure 16). Under the middle alternative, public enrollment is expected to increase to 12.7 million by 2009, rising by an average annual growth rate of 1.1 percent, for an increase of 13 percent over the projection period. During the projection period, enrollment in public institutions is projected to increase at an average annual growth rate of 1.0 percent during the 1997–2003 period and 1.1 percent during the 2003–2009 period (figure 17).

Under the low alternative, public enrollment is expected to increase from 11.2 million in 1997 to 12.5 million by the year 2009, representing a growth rate of 0.9 percent per year. Under the high alternative, public enrollment is expected to increase from 11.2 million in 1997 to 13.0 million by the year 2009, representing a growth rate of 1.2 percent per year.

Enrollment in private institutions, which include nonprofit and proprietary, increased from 2.8 million in 1984 to an estimated 3.2 million in 1997, increasing at an average annual growth rate of 1.1 percent, for an increase of 15 percent over the period. Under the middle alternative, private enrollment is expected to increase to 3.6 million by 2009, rising by an average annual growth rate of 1.1 percent, for an increase of 14 percent over the projection period. During the projection period, enrollment in private institutions is projected to increase at an annual growth rate of 1.0 percent during the 1997–2003 period and 1.2 percent during the 2003–2009 period.

Under the low alternative, private enrollment is expected to increase from 3.2 million in 1997 to slightly under 3.6 million by the year 2009, representing a growth rate of 1.0 percent per year. Under the high alternative, private enrollment is expected to increase from 3.2 million in 1997 to 3.7 million by the year 2009, representing a growth rate of 1.3 percent per year.

Enrollment, by Type of Institution

Enrollment in 4-year institutions increased from 7.7 million in 1984 to an estimated 8.8 million in 1997, increasing at an average annual growth rate of 1.0 percent, for a 14 percent increase over the period (table 4 and figure 18). Under the middle alternative, enrollment in 4-year institutions is expected to rise to 10.1 million by the year 2009, increasing at an average annual growth rate of 1.1 percent, for a 15-percent increase over the projection period. During the projection period, enrollment in 4-year institutions is projected to increase at an annual growth rate of 1.1 percent during the 1997–2003 period and 1.2 percent during the 2003–2009 period (figure 19).

Under the low alternative, enrollment in 4-year institutions is expected to increase from 8.8 million in 1997 to 9.9 million by the year 2009, representing a growth rate of 1.0 percent per year. Under the high alternative, enrollment in 4-year institutions is expected to increase from 8.8 million in 1997 to 10.3 million by the year 2009, representing a growth rate of 1.3 percent per year.

Enrollment in 2-year institutions rose from 4.5 million in 1984 to an estimated 5.6 million in 1997, increasing at an average annual growth rate of 1.6 percent per year, for a 23-percent increase over the period (table 5). Under the middle alternative, enrollment in 2-year institutions is expected to rise to 6.2 million by the year 2009, increasing at an average annual growth rate of 0.9 percent, for a 12-percent increase over the projection period. During the projection period, enrollment in 2-year institutions is projected to increase at an annual growth rate of 0.9 percent during the 1997–2003 period and 1.0 percent during the 2003–2009 period.

Under the low alternative, enrollment in 2-year institutions is expected to increase from 5.6 million in 1997 to 6.1 million by the year 2009, representing a growth rate of 0.8 percent per year. Under the high alternative, enrollment in 2-year institutions is expected to increase from 5.6 million in 1997 to 6.4 million by the year 2009, representing a growth rate of 1.1 percent per year.

Enrollment, by Age

The alternative projections of higher education enrollment by age, sex, and attendance status are shown in tables 6A and 6B (middle alternative), table 7 (low alternative), and table 8 (high alternative). Projections of college attendance rates appear in appendix table A1.3. These projections are based on age-specific enrollment data from the Bureau of the Census and enrollment data from NCES.

Under the middle alternative, the period from 1989 to 2009 will be one of change in the age distribution of college students. In contrast to recent patterns, younger students are expected to become more prevalent on college campuses. The enrollment of students who are 18- to 24-years old increased from 7.8 million in 1989 to an estimated 7.9 million in 1997, an increase of 2 percent (tables 6A and 6B and figure 26). However, this number is expected to increase to 9.8 million by the year 2009, an increase of 24 percent from 1997. As a result, the proportion of students who are 18- to 24-years old, which fell from 57 percent in 1989 to 55 percent in 1997, is projected to be 60 percent by the year 2009.

On the other hand, the enrollment of students who are 25 years old and over increased from 5.6 million in 1989 to an estimated 6.3 million in 1997, an increase of 13 percent. This number is projected to be about the same in the year 2009. The proportion of students 25 years old and over rose from 41 percent in 1989 to 44 percent in 1997. This proportion is projected to be 39 percent by the year 2009.

Enrollment, by Level

Undergraduate enrollment increased from 10.6 million in 1984 to an estimated 12.4 million in 1997, increasing at an average annual growth rate of 1.2 percent, for a 16-percent increase over the period (table 14 and figure 20). Under the middle alternative, undergraduate enrollment is expected to increase to 14.3 million by the year 2009, at a growth rate of 1.2 percent per year, for a 15-percent increase over the projection period. During the projection period, undergraduate enrollment is projected to increase at an annual growth rate of 1.2 percent during the 1997–2003 period and 1.2 percent during the 2003–2009 period (figure 21).

Under the low alternative, undergraduate enrollment is expected to increase from 12.4 million in 1997 to 14.0 million by the year 2009, representing a growth rate of 1.0 percent per year. Under the high alternative, undergraduate enrollment is expected to increase from 12.4 million in 1997 to 14.6 million by the year 2009, representing a growth rate of 1.4 percent per year.

Graduate enrollment rose from 1.3 million in 1984 to an estimated 1.7 million in 1997, at an average annual growth rate of 2.0 percent, for a 30-percent increase over the period (table 17 and figure 22). Under the middle alternative, graduate enrollment is expected to increase to 1.8 million by the year 2009, increasing at an average annual growth rate of 0.2 percent, for a 3-percent increase over the projection period. During the projection period, graduate enrollment is projected to show no change during the 1997–2003 period and increase at a rate of 0.5 percent during the 2003–2009 period (figure 23).

Under the low alternative, graduate enrollment is expected to remain relatively stable between 1997 and 2009. Under the high alternative, graduate enrollment is expected to increase slightly from 1.7 million in 1997 to 1.8 million by the year 2009, representing a growth rate of 0.4 percent per year.

First-professional enrollment increased from 279,000 in 1984 to an estimated 286,000 in 1997, an average annual growth rate of 0.2 percent, for a 3-percent increase over the period (table 20 and figure 22). Under the middle alternative, first-professional enrollment is expected to increase to 291,000 by 2009. This represents an annual growth rate of 0.1 percent over the projection period, a 2-percent increase from 1997. During the projection period, first-professional enrollment is projected to decrease at a rate of 0.7 percent during the 1997–2003 period and increase at a growth rate of 0.9 percent during the 2003–2009 period (figure 23).

Under the low alternative, first-professional enrollment is expected to remain stable through the year 2009. Under the high alternative, first-professional enrollment is expected to increase from 286,000 in 1997 to 299,000 by the year 2009, representing a growth rate of 0.4 percent per year.

Full-Time-Equivalent Enrollment

Full-time-equivalent enrollment increased from 9.0 million in 1984 to an estimated 10.4 million in 1997, increasing at an average annual rate of growth of 1.1 percent, for a 16-percent increase over the period (table 23 and figure 24). Under the middle alternative, full-time-equivalent enrollment is expected to increase to 12.1 million by the year 2009, increasing at an average annual growth rate of 1.3 percent, for a 16-percent increase over the projection period. During the projection period, full-time-equivalent enrollment is projected to increase at an annual growth rate of 1.2 percent during the 1993–2002 period and 1.4 percent during the 2003–2009 period (figure 25).

In public institutions, full-time-equivalent enrollment, which was an estimated 7.8 million in 1997, will be 9.1 million by the year 2009 (table 24). In private institutions, full-time-equivalent enrollment, which was an estimated 2.6 million in 1997, will be 3.0 million by the year 2009 (table 25).

Under the low alternative, full-time-equivalent enrollment is expected to increase from 10.4 million in 1997 to 11.9 million by the year 2009, representing a growth rate of 1.1 percent per year. Under the high alternative, full-time-equivalent enrollment is expected to increase from 10.4 million in 1997 to 12.3 million by the year 2009, representing a growth rate of 1.5 percent per year.

Figure 8
College-age populations (18-24 years and 25-29 years), with projections: 1984 to 2009

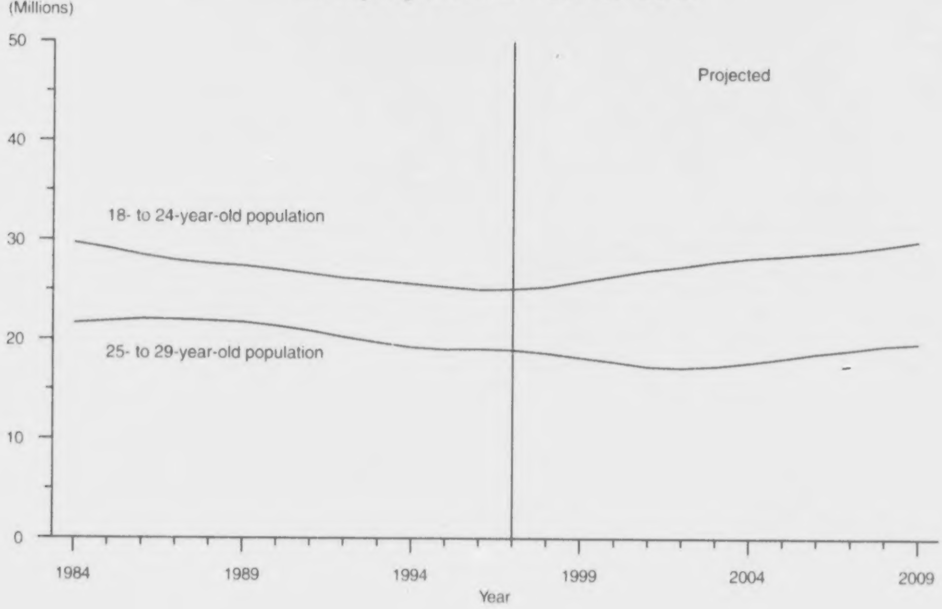

Figure 9
College-age populations (30-34 years and 35-44 years), with projections: 1984 to 2009

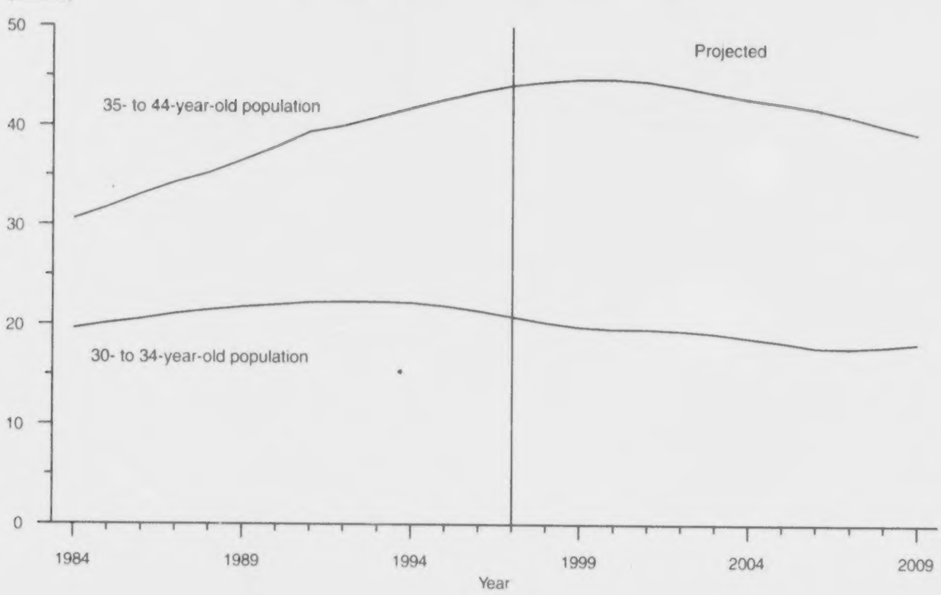

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Figure 10
Enrollment in institutions of higher education, with alternative projections: Fall 1984 to fall 2009

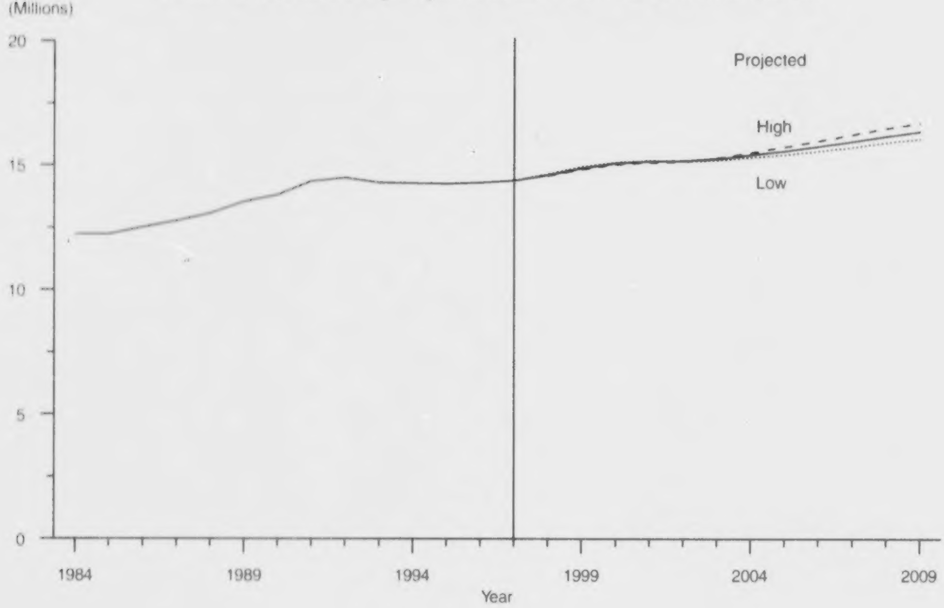

Figure 11
Average annual growth rates for total higher education enrollment: Fall 1984 to fall 2009

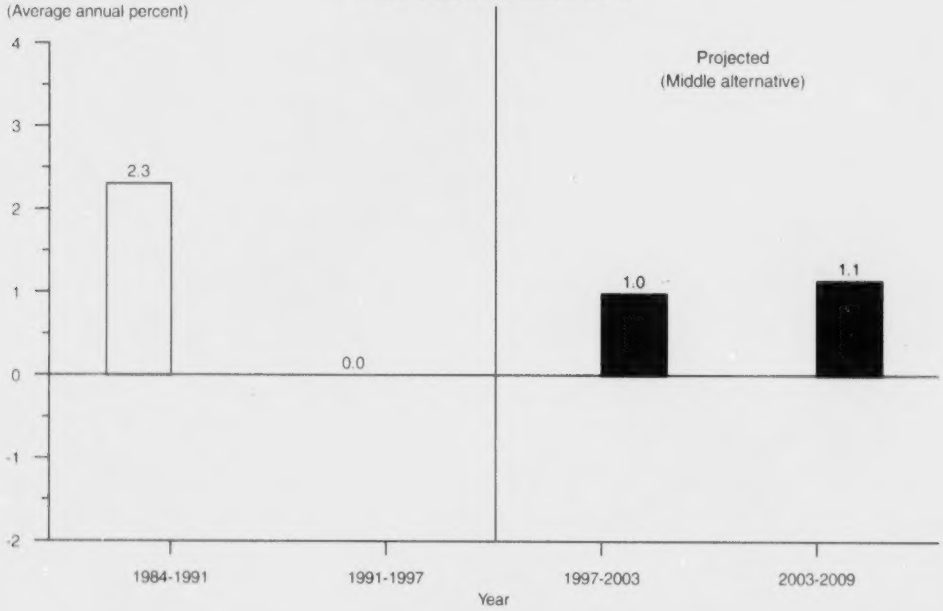

Figure 12
Enrollment in institutions of higher education, by sex, with middle alternative projections: Fall 1984 to fall 2009

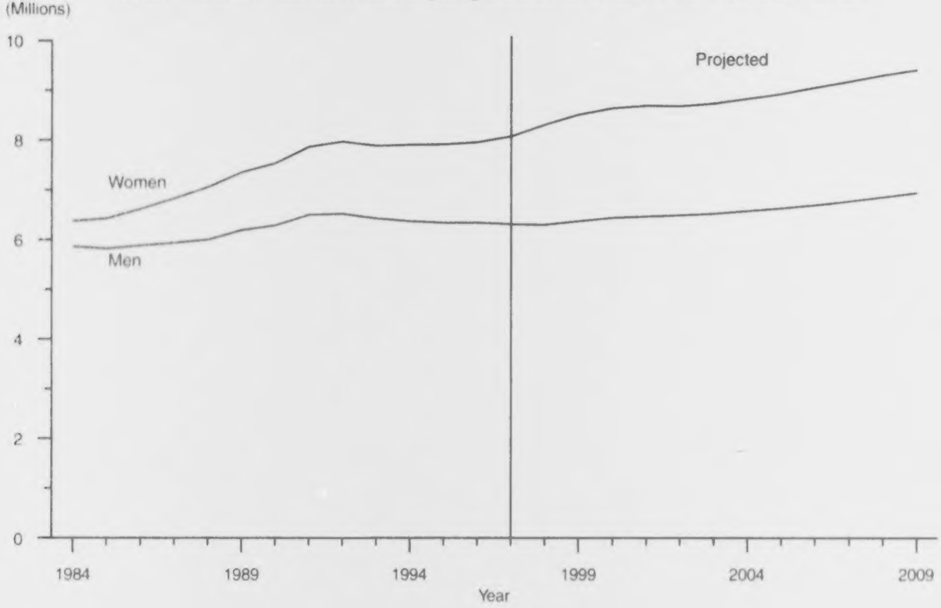

Figure 13
Average annual growth rates for total higher education enrollment, by sex: Fall 1984 to fall 2009

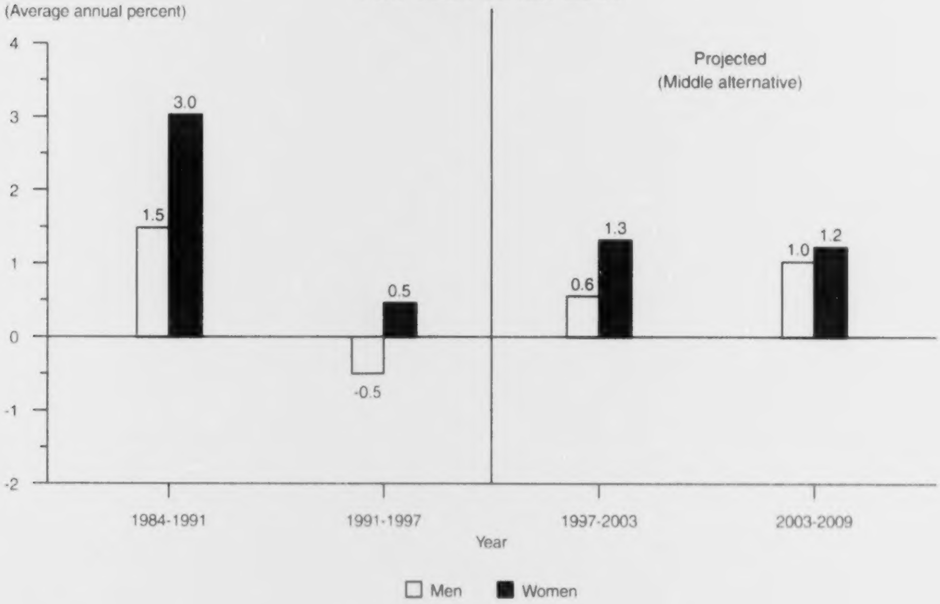

Figure 14
Enrollment in institutions of higher education, by attendance status, with middle alternative projections: Fall 1984 to fall 2009

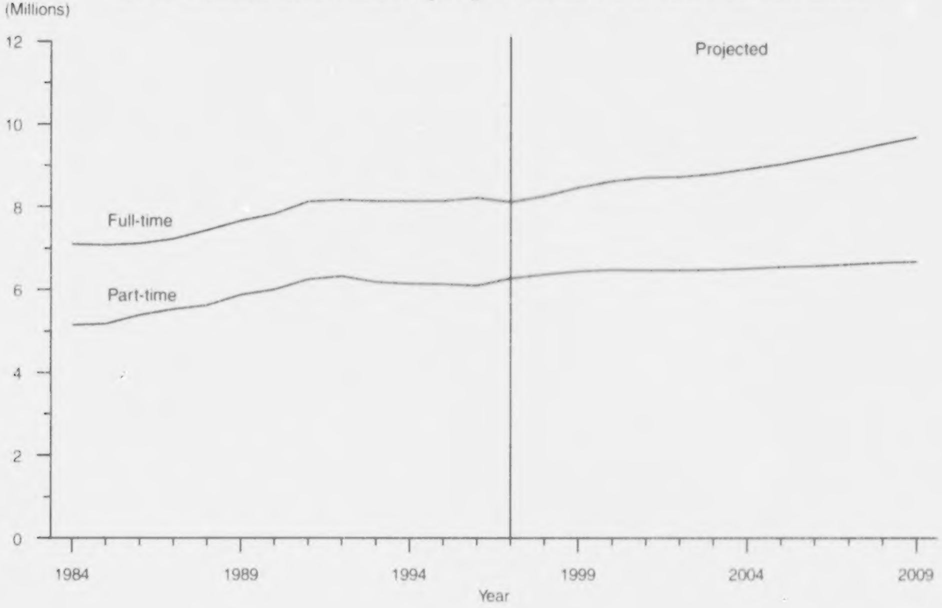

Figure 15
Average annual growth rates for total higher education enrollment, by attendance status: Fall 1984 to fall 2009

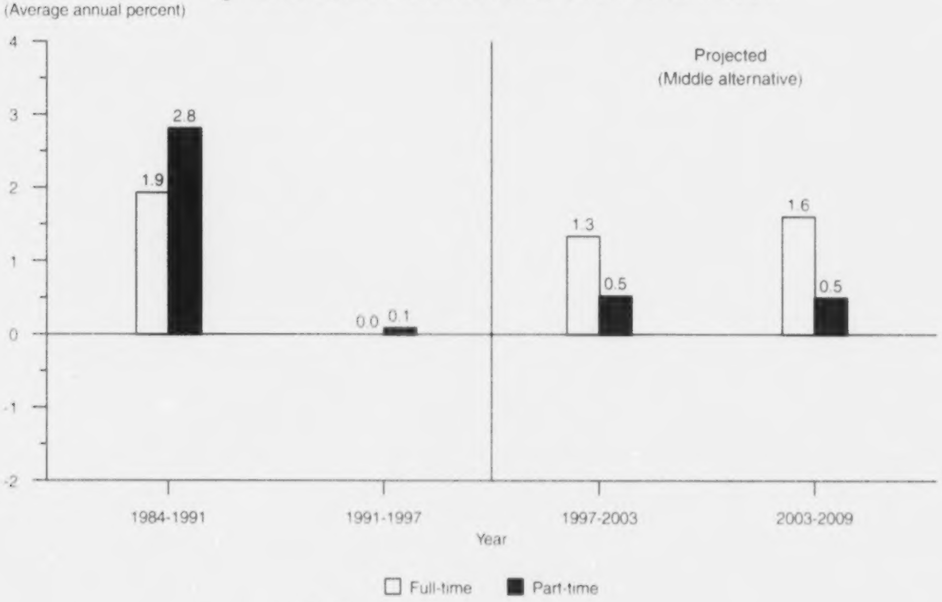

Figure 16
Enrollment in institutions of higher education, by control of institution, with alternative projections: Fall 1984 to fall 2009

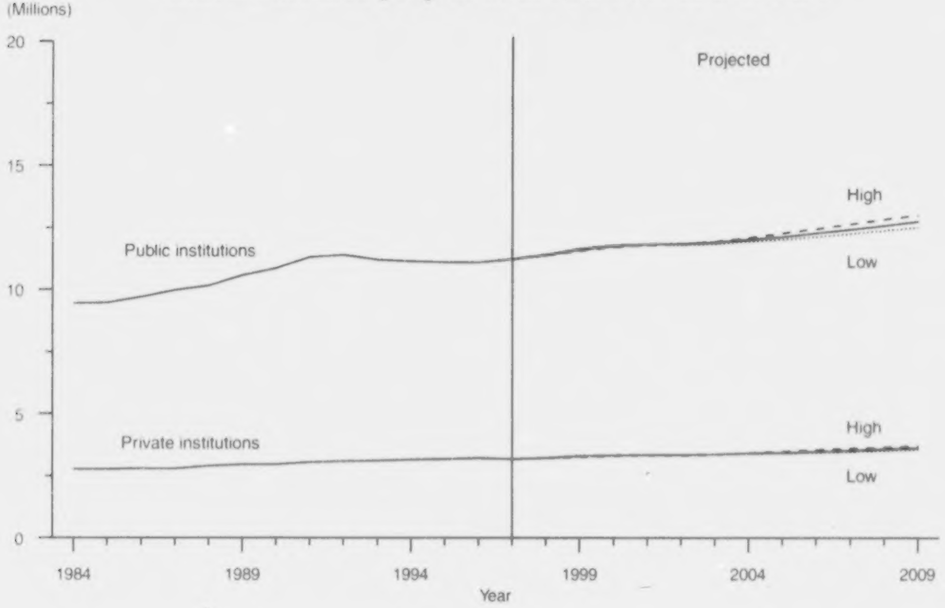

Figure 17
Average annual growth rates for total higher education enrollment, by control of institution: Fall 1984 to 2009

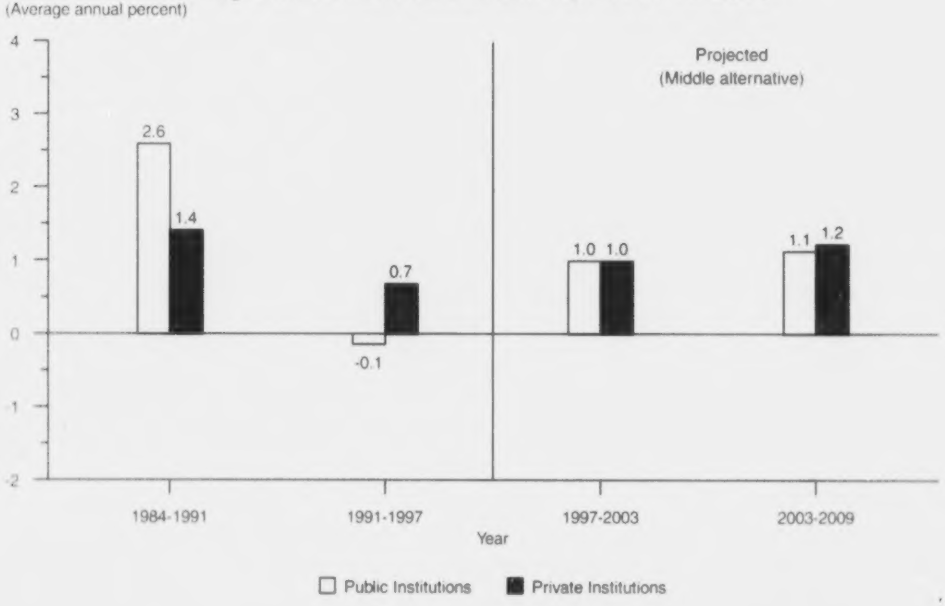

Figure 18
Enrollment in institutions of higher education, by type of institution, with alternative projections: Fall 1984 to fall 2009

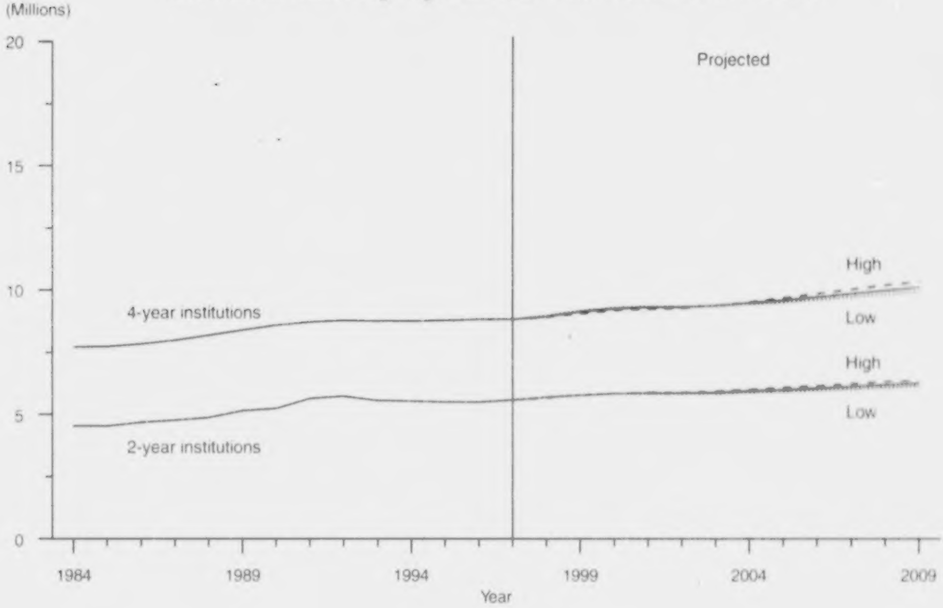

Figure 19
Average annual growth rates for total higher education enrollment, by type of institution: Fall 1984 to fall 2009

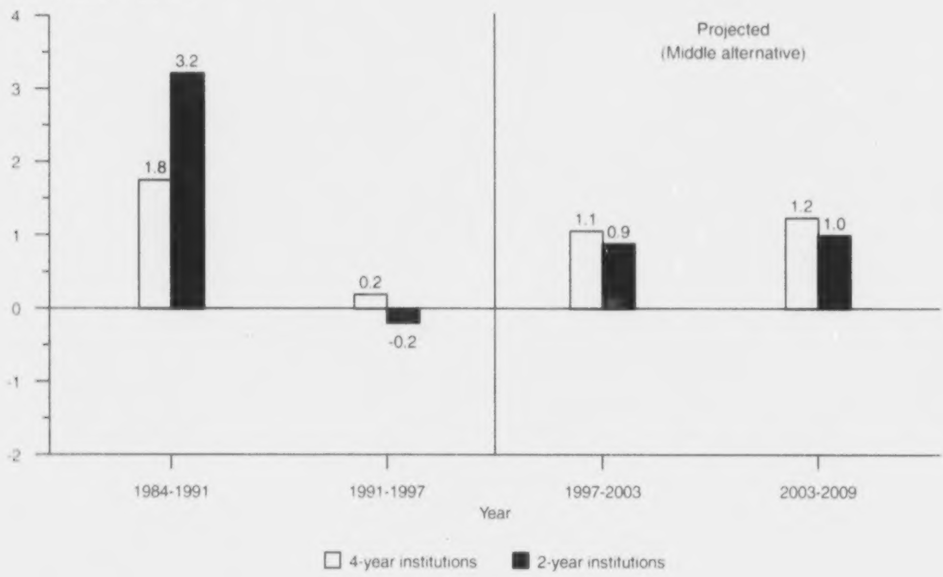

Figure 20
Undergraduate enrollment in institutions of higher education, with alternative projections: Fall 1984 to fall 2009

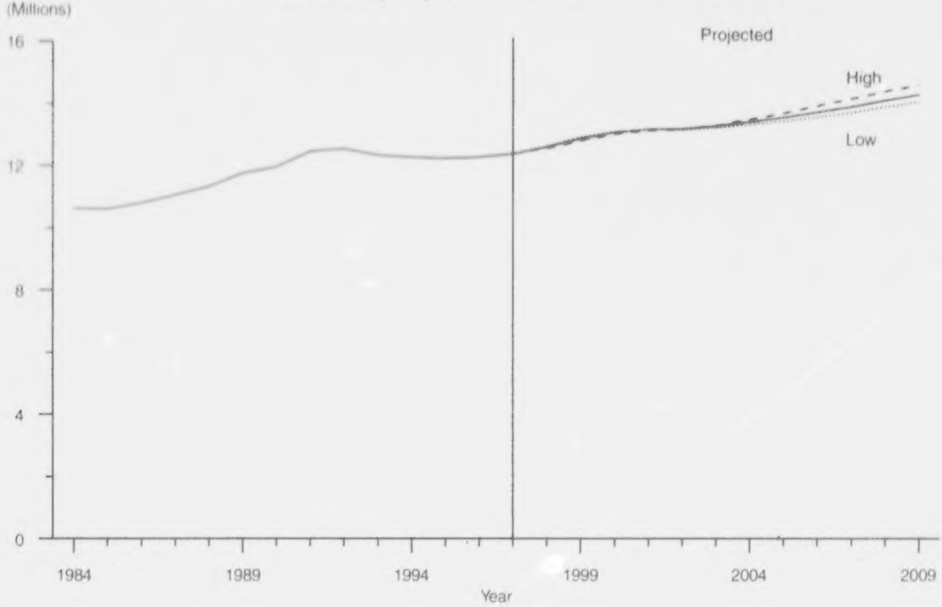

Figure 21
Average annual growth rates for undergraduate enrollment: Fall 1984 to fall 2009

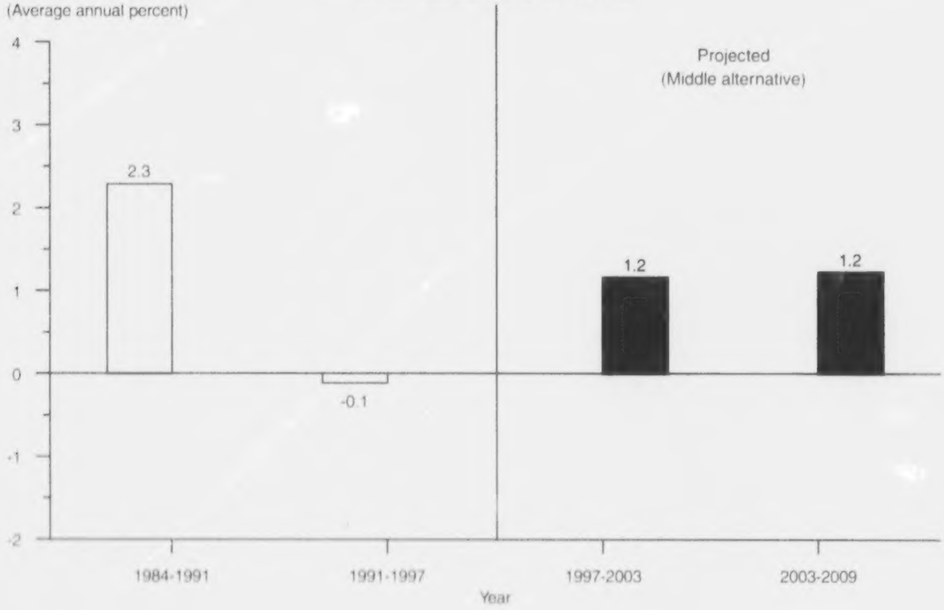

Figure 22
Postbaccalaureate enrollment in institutions of higher education, with alternative projections: Fall 1984 to fall 2009

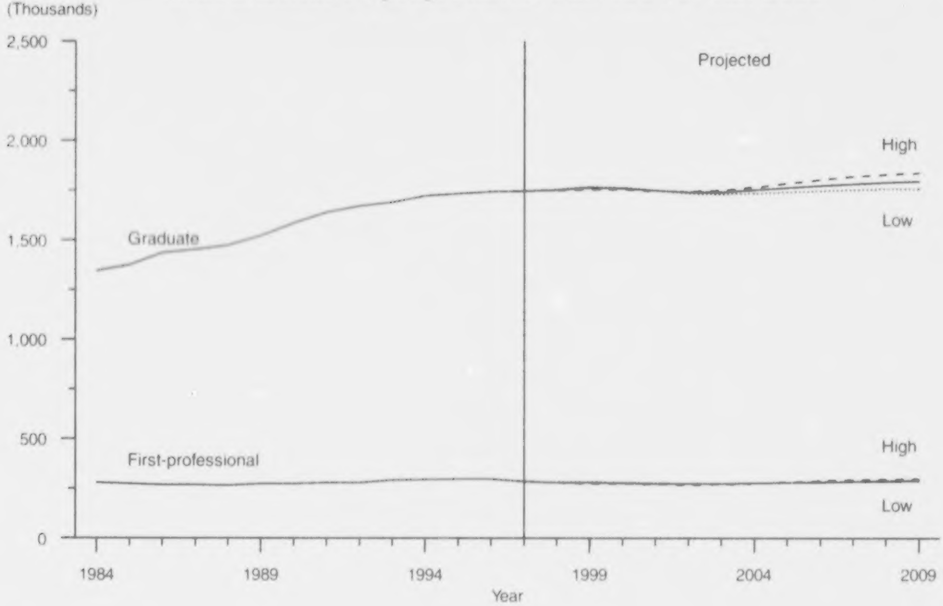

Figure 23
Average annual rates of change for postbaccalaureate enrollment: Fall 1984 to fall 2009

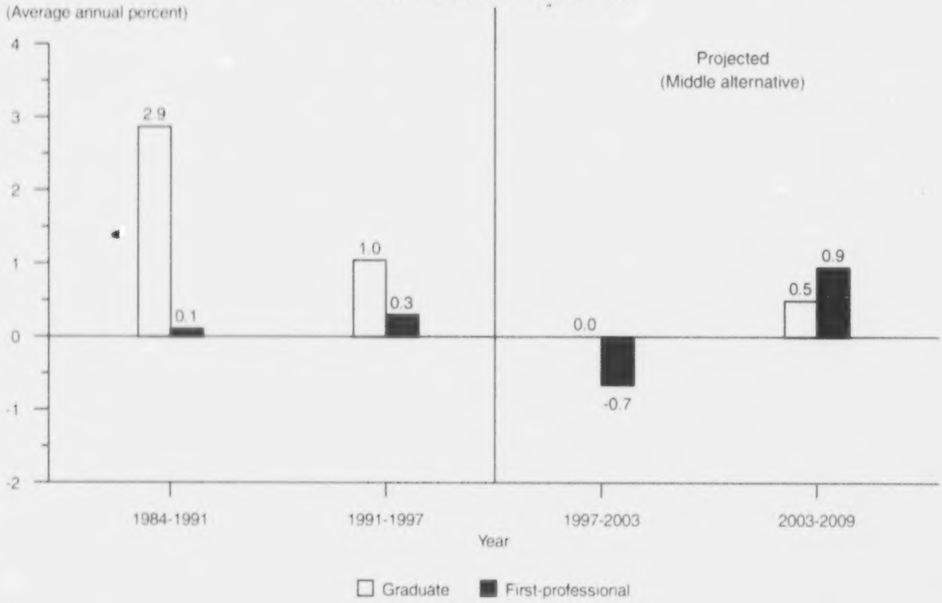

Figure 24
Full-time-equivalent enrollment in institutions of higher education, with alternative projections: Fall 1984 to fall 2009

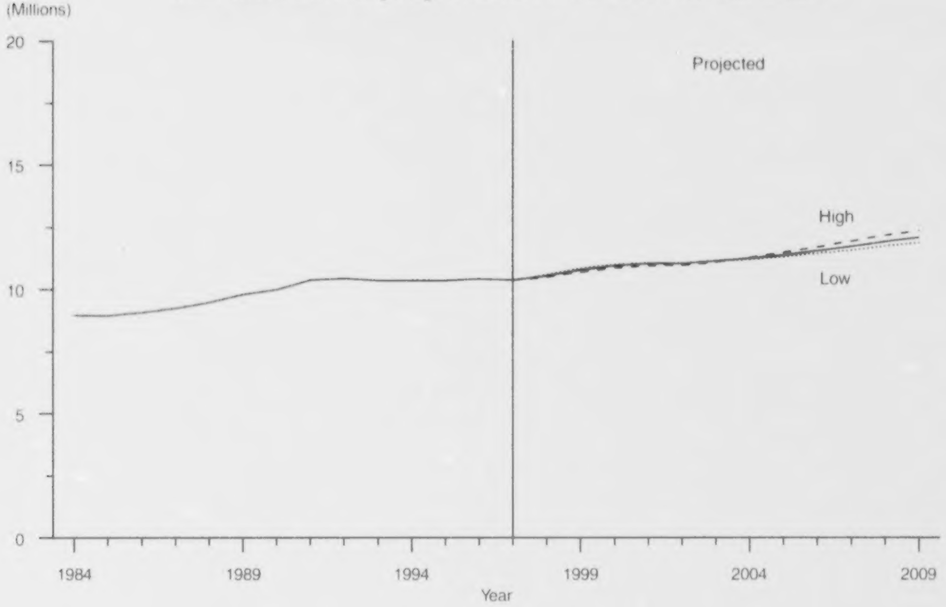

Figure 25
Average annual growth rates for full-time-equivalent enrollment: Fall 1984 to fall 2009

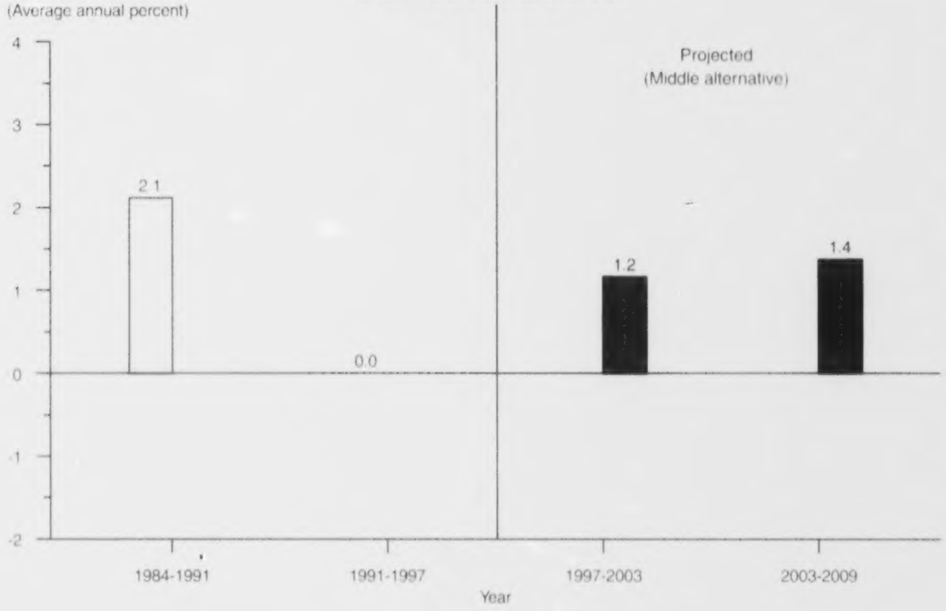

Figure 26

Enrollment in institutions of higher education, by age group, with middle alternative projections: Fall 1989, 1999, and 2009

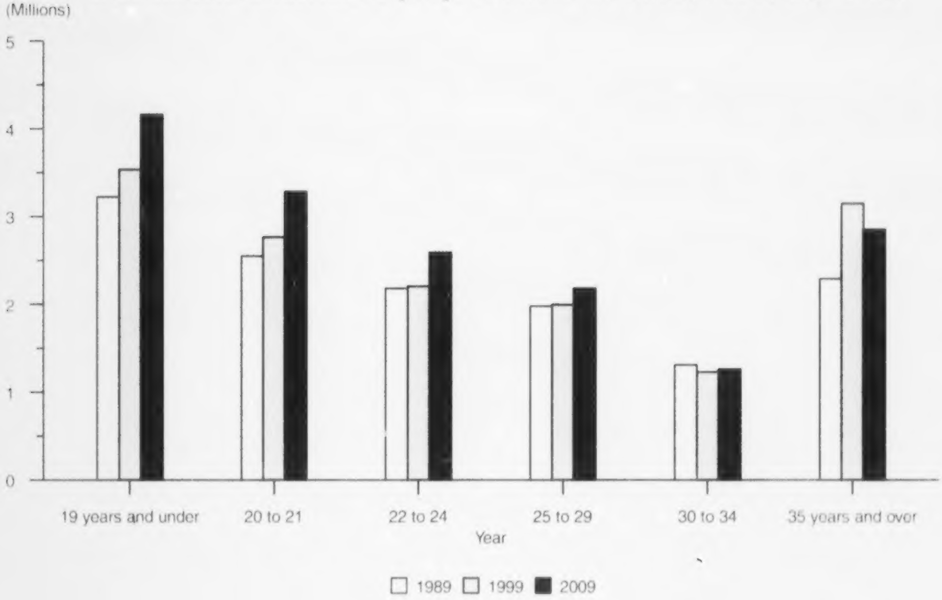

Figure 27
Enrollment of men in institutions of higher education, by age group, with middle alternative projections: Fall 1989, 1999, and 2009

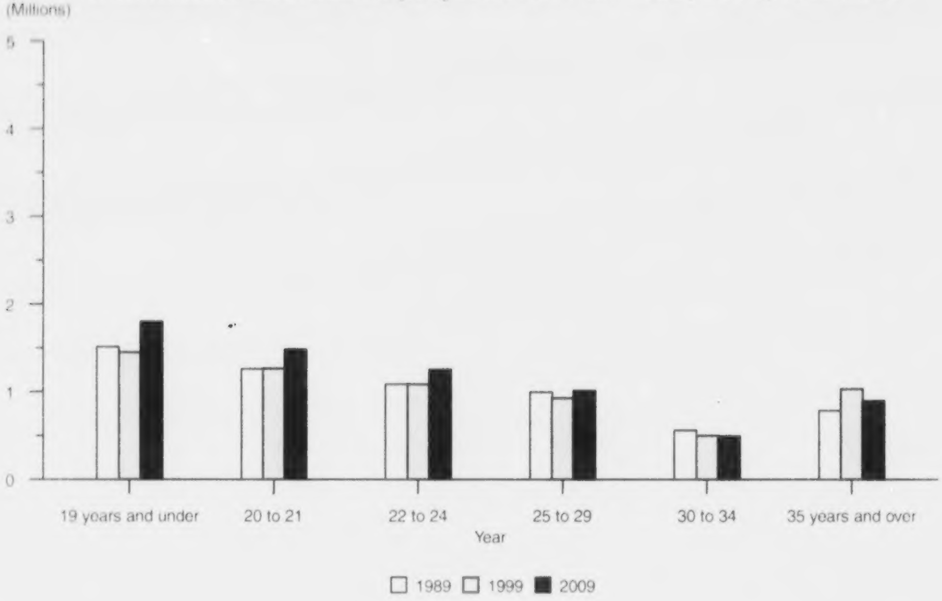

Figure 28
Enrollment of women in institutions of higher education, by age group, with middle alternative projections: Fall 1989, 1999, and 2009

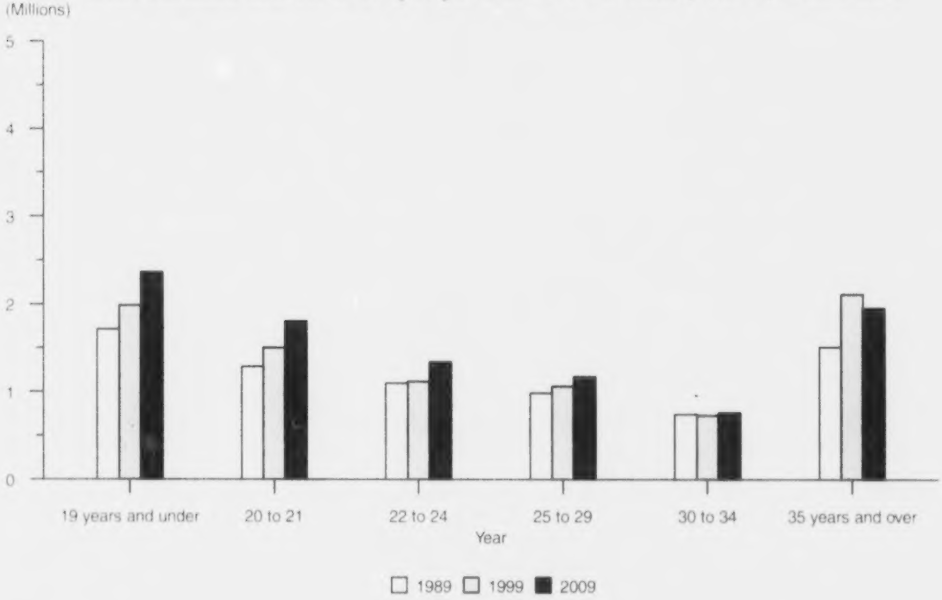

Table 3.—Total enrollment in all institutions of higher education, by sex, attendance status, and control of institution, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1984	12,242	5,864	6,378	7,098	5,144	9,477	2,765
1985	12,247	5,818	6,429	7,075	5,172	9,479	2,768
1986	12,504	5,885	6,619	7,120	5,384	9,714	2,790
1987	12,767	5,932	6,835	7,231	5,536	9,973	2,793
1988	13,055	6,002	7,053	7,437	5,619	10,161	2,894
1989	13,539	6,190	7,349	7,661	5,878	10,578	2,961
1990	13,819	6,284	7,535	7,821	5,998	10,845	2,974
1991	14,359	6,502	7,857	8,115	6,244	11,310	3,049
1992	14,487	6,524	7,963	8,162	6,325	11,385	3,103
1993	14,305	6,427	7,877	8,128	6,177	11,189	3,116
1994	14,279	6,372	7,907	8,138	6,141	11,134	3,145
1995	14,262	6,343	7,919	8,129	6,133	11,092	3,169
1996	14,300	6,344	7,956	8,213	6,087	11,090	3,210
1997[1]	14,390	6,313	8,077	8,114	6,276	11,214	3,175
Middle alternative projections							
1998	14,608	6,297	8,311	8,242	6,366	11,390	3,218
1999	14,881	6,370	8,511	8,449	6,432	11,602	3,279
2000	15,072	6,432	8,639	8,600	6,471	11,750	3,322
2001	15,158	6,471	8,688	8,690	6,469	11,816	3,342
2002	15,168	6,486	8,682	8,702	6,466	11,823	3,345
2003	15,262	6,525	8,736	8,787	6,475	11,894	3,368
2004	15,400	6,577	8,823	8,895	6,505	12,000	3,400
2005	15,556	6,628	8,928	9,019	6,537	12,119	3,437
2006	15,739	6,691	9,048	9,169	6,570	12,258	3,481
2007	15,929	6,763	9,166	9,325	6,604	12,403	3,526
2008	16,144	6,852	9,291	9,503	6,640	12,568	3,576
2009	16,336	6,937	9,399	9,666	6,670	12,715	3,621
Low alternative projections							
1998	14,639	6,308	8,331	8,278	6,361	11,412	3,227
1999	14,931	6,389	8,542	8,515	6,416	11,636	3,295
2000	15,104	6,451	8,654	8,666	6,438	11,769	3,335
2001	15,162	6,485	8,677	8,744	6,418	11,812	3,349
2002	15,142	6,495	8,646	8,742	6,399	11,796	3,346
2003	15,201	6,528	8,673	8,806	6,395	11,840	3,361
2004	15,301	6,571	8,730	8,889	6,413	11,918	3,384
2005	15,414	6,613	8,801	8,980	6,434	12,003	3,411
2006	15,555	6,666	8,890	9,098	6,458	12,111	3,444
2007	15,709	6,729	8,980	9,224	6,485	12,229	3,480
2008	15,889	6,810	9,080	9,375	6,514	12,368	3,521
2009	16,049	6,887	9,162	9,512	6,538	12,491	3,558
High alternative projections							
1998	14,578	6,287	8,291	8,207	6,371	11,369	3,209
1999	14,822	6,347	8,474	8,372	6,449	11,561	3,261
2000	15,015	6,406	8,608	8,508	6,507	11,713	3,302
2001	15,117	6,445	8,672	8,595	6,522	11,792	3,324
2002	15,147	6,462	8,685	8,612	6,536	11,817	3,330
2003	15,285	6,510	8,775	8,724	6,561	11,921	3,363
2004	15,486	6,576	8,910	8,880	6,606	12,075	3,411
2005	15,717	6,647	9,069	9,069	6,648	12,249	3,468
2006	15,970	6,730	9,240	9,284	6,686	12,439	3,531
2007	16,214	6,817	9,398	9,492	6,723	12,624	3,590
2008	16,468	6,917	9,552	9,708	6,760	12,818	3,650
2009	16,687	7,008	9,679	9,895	6,792	12,985	3,702

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 4.—Total enrollment in 4-year institutions of higher education, by sex, attendance status, and control of institution, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1984	7,711	3,847	3,864	5,395	2,317	5,198	2,513
1985	7,716	3,816	3,900	5,385	2,331	5,210	2,506
1986	7,824	3,824	4,000	5,423	2,401	5,300	2,524
1987	7,990	3,859	4,131	5,522	2,468	5,432	2,558
1988	8,180	3,912	4,268	5,693	2,487	5,546	2,634
1989	8,388	3,973	4,414	5,805	2,582	5,694	2,693
1990	8,579	4,051	4,527	5,937	2,642	5,848	2,730
1991	8,707	4,100	4,607	6,041	2,666	5,905	2,802
1992	8,765	4,111	4,654	6,082	2,683	5,900	2,865
1993	8,739	4,082	4,657	6,084	2,655	5,852	2,887
1994	8,749	4,049	4,700	6,106	2,643	5,825	2,924
1995	8,769	4,014	4,755	6,152	2,617	5,815	2,955
1996	8,803	3,996	4,807	6,227	2,576	5,807	2,996
1997[*]	8,805	3,976	4,829	6,108	2,697	5,852	2,953
Middle alternative projections							
1998	8,928	3,952	4,975	6,188	2,740	5,937	2,990
1999	9,106	4,000	5,107	6,337	2,770	6,059	3,047
2000	9,234	4,040	5,194	6,450	2,783	6,147	3,086
2001	9,298	4,069	5,229	6,518	2,780	6,193	3,105
2002	9,309	4,081	5,228	6,533	2,776	6,201	3,108
2003	9,376	4,109	5,268	6,600	2,777	6,247	3,129
2004	9,465	4,140	5,326	6,678	2,787	6,307	3,159
2005	9,572	4,174	5,398	6,773	2,799	6,378	3,194
2006	9,696	4,216	5,480	6,886	2,810	6,462	3,235
2007	9,822	4,262	5,560	7,001	2,821	6,546	3,276
2008	9,963	4,319	5,644	7,131	2,832	6,641	3,322
2009	10,092	4,374	5,718	7,253	2,840	6,729	3,363
Low alternative projections							
1998	8,953	3,961	4,992	6,215	2,738	5,954	2,999
1999	9,150	4,016	5,133	6,386	2,763	6,088	3,062
2000	9,270	4,058	5,212	6,500	2,770	6,171	3,099
2001	9,317	4,085	5,232	6,559	2,758	6,205	3,112
2002	9,311	4,095	5,216	6,564	2,747	6,202	3,109
2003	9,357	4,119	5,238	6,615	2,742	6,234	3,123
2004	9,422	4,146	5,276	6,674	2,747	6,277	3,144
2005	9,499	4,174	5,325	6,744	2,754	6,329	3,170
2006	9,595	4,209	5,386	6,834	2,761	6,394	3,201
2007	9,695	4,249	5,447	6,926	2,769	6,462	3,233
2008	9,813	4,300	5,513	7,036	2,777	6,542	3,271
2009	9,920	4,351	5,569	7,138	2,782	6,614	3,305
High alternative projections							
1998	8,903	3,944	4,960	6,162	2,741	5,921	2,982
1999	9,055	3,980	5,075	6,279	2,777	6,026	3,030
2000	9,179	4,016	5,163	6,381	2,798	6,111	3,068
2001	9,248	4,042	5,206	6,446	2,802	6,160	3,088
2002	9,269	4,054	5,215	6,464	2,805	6,175	3,094
2003	9,365	4,087	5,278	6,551	2,814	6,240	3,125
2004	9,497	4,128	5,368	6,666	2,831	6,328	3,169
2005	9,657	4,177	5,480	6,809	2,847	6,434	3,222
2006	9,833	4,233	5,600	6,972	2,861	6,552	3,281
2007	9,999	4,290	5,709	7,125	2,874	6,663	3,336
2008	10,169	4,355	5,814	7,284	2,885	6,778	3,391
2009	10,318	4,416	5,902	7,423	2,894	6,878	3,439

[*] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Table 5.—Total enrollment in 2-year institutions of higher education, by sex, attendance status, and control of institution, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1984	4,531	2,017	2,514	1,704	2,827	4,279	252
1985	4,531	2,002	2,529	1,691	2,840	4,270	261
1986	4,680	2,061	2,619	1,696	2,983	4,414	266
1987	4,776	2,073	2,703	1,709	3,068	4,541	235
1988	4,875	2,090	2,785	1,744	3,132	4,615	260
1989	5,151	2,217	2,934	1,856	3,295	4,884	267
1990	5,240	2,233	3,007	1,884	3,356	4,996	244
1991	5,652	2,402	3,250	2,075	3,577	5,405	247
1992	5,722	2,413	3,309	2,080	3,642	5,485	238
1993	5,566	2,345	3,220	2,043	3,523	5,337	229
1994	5,530	2,323	3,207	2,032	3,498	5,308	221
1995	5,493	2,329	3,164	1,977	3,515	5,278	215
1996	5,497	2,348	3,149	1,987	3,511	5,283	214
1997[*]	5,585	2,337	3,247	2,006	3,579	5,362	223
Middle alternative projections							
1998	5,680	2,345	3,336	2,054	3,627	5,453	227
1999	5,775	2,370	3,405	2,112	3,662	5,543	232
2000	5,838	2,392	3,446	2,150	3,688	5,602	235
2001	5,861	2,402	3,458	2,172	3,689	5,624	237
2002	5,859	2,406	3,454	2,169	3,690	5,622	237
2003	5,885	2,417	3,469	2,188	3,698	5,647	238
2004	5,935	2,437	3,498	2,217	3,718	5,694	241
2005	5,984	2,454	3,530	2,246	3,738	5,741	243
2006	6,042	2,475	3,567	2,283	3,760	5,796	247
2007	6,107	2,501	3,606	2,324	3,783	5,857	250
2008	6,181	2,534	3,647	2,372	3,808	5,927	254
2009	6,244	2,563	3,681	2,413	3,830	5,986	257
Low alternative projections							
1998	5,686	2,347	3,340	2,063	3,624	5,458	228
1999	5,781	2,373	3,409	2,129	3,653	5,548	233
2000	5,835	2,393	3,442	2,166	3,669	5,598	236
2001	5,845	2,400	3,445	2,185	3,660	5,607	237
2002	5,831	2,400	3,430	2,178	3,652	5,594	237
2003	5,844	2,408	3,435	2,191	3,652	5,606	238
2004	5,880	2,425	3,454	2,214	3,665	5,640	240
2005	5,915	2,439	3,476	2,236	3,679	5,674	241
2006	5,960	2,457	3,503	2,264	3,696	5,717	244
2007	6,013	2,480	3,533	2,298	3,716	5,767	247
2008	6,077	2,510	3,567	2,339	3,738	5,827	250
2009	6,130	2,536	3,593	2,374	3,756	5,877	253
High alternative projections							
1998	5,675	2,343	3,332	2,045	3,630	5,448	227
1999	5,766	2,367	3,399	2,093	3,673	5,535	231
2000	5,836	2,390	3,446	2,127	3,709	5,602	234
2001	5,868	2,402	3,466	2,149	3,720	5,632	236
2002	5,878	2,408	3,470	2,147	3,730	5,642	236
2003	5,920	2,423	3,497	2,173	3,747	5,682	238
2004	5,990	2,448	3,542	2,214	3,775	5,748	242
2005	6,060	2,470	3,590	2,260	3,801	5,815	246
2006	6,137	2,497	3,641	2,312	3,825	5,887	250
2007	6,215	2,526	3,689	2,366	3,849	5,961	254
2008	6,300	2,562	3,738	2,424	3,875	6,040	259
2009	6,370	2,592	3,777	2,471	3,898	6,106	263

[*] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 6A.—Enrollment in all institutions of higher education, by age, sex, and attendance status: Fall 1984 to fall 1996

(In thousands)

Sex and Age	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Men and women, total	**12,242**	**12,247**	**12,504**	**12,767**	**13,055**	**13,539**	**13,819**	**14,359**	**14,487**	**14,305**	**14,279**	**14,262**	**14,300**
14 to 17 years old	242	246	206	264	179	185	177	125	186	127	138	148	229
18 and 19 years old	2,783	2,753	2,914	3,012	2,940	3,041	2,950	2,864	2,784	2,840	2,787	2,894	3,004
20 and 21 years old	2,509	2,505	2,304	2,651	2,667	2,550	2,761	2,920	2,883	2,674	2,724	2,705	2,643
22 to 24 years old	2,033	1,920	2,051	1,979	2,068	2,185	2,144	2,306	2,527	2,570	2,482	2,411	2,316
25 to 29 years old	1,852	1,866	1,893	1,745	1,740	1,979	1,982	2,072	1,985	2,002	1,985	2,120	2,124
30 to 34 years old	1,232	1,185	1,219	1,223	1,283	1,305	1,322	1,415	1,456	1,345	1,414	1,236	1,194
35 years old and over	1,591	1,773	1,918	1,892	2,179	2,293	2,484	2,656	2,665	2,747	2,750	2,747	2,790
Men, total	**5,864**	**5,818**	**5,885**	**5,932**	**6,002**	**6,190**	**6,284**	**6,502**	**6,524**	**6,427**	**6,372**	**6,343**	**6,344**
14 to 17 years old	86	128	85	127	58	77	87	50	89	54	62	61	92
18 and 19 years old	1,304	1,331	1,428	1,427	1,343	1,433	1,421	1,299	1,305	1,288	1,302	1,338	1,342
20 and 21 years old	1,270	1,282	1,143	1,318	1,332	1,261	1,368	1,387	1,342	1,284	1,264	1,282	1,224
22 to 24 years old	1,138	1,022	1,067	995	1,130	1,084	1,107	1,232	1,272	1,344	1,238	1,153	1,175
25 to 29 years old	950	935	1,001	920	844	993	940	1,049	955	903	936	962	993
30 to 34 years old	573	531	545	520	588	562	537	614	627	584	601	561	480
35 years old and over	542	590	616	625	707	782	824	870	933	970	969	986	1,039
Women, total	**6,378**	**6,429**	**6,619**	**6,835**	**7,053**	**7,349**	**7,535**	**7,857**	**7,963**	**7,877**	**7,907**	**7,919**	**7,956**
14 to 17 years old	157	118	121	136	121	108	90	76	97	73	75	87	137
18 and 19 years old	1,479	1,422	1,486	1,585	1,596	1,608	1,529	1,565	1,479	1,552	1,485	1,557	1,662
20 and 21 years old	1,239	1,223	1,161	1,333	1,336	1,290	1,392	1,533	1,541	1,391	1,461	1,424	1,419
22 to 24 years old	894	898	983	984	937	1,101	1,037	1,074	1,255	1,226	1,243	1,258	1,141
25 to 29 years old	901	931	892	825	896	986	1,043	1,022	1,030	1,098	1,049	1,159	1,131
30 to 34 years old	659	653	673	703	695	743	784	800	828	761	812	675	714
35 years old and over	1,049	1,183	1,302	1,268	1,472	1,511	1,659	1,786	1,732	1,777	1,781	1,760	1,752
Full-time	**7,098**	**7,075**	**7,120**	**7,231**	**7,437**	**7,661**	**7,821**	**8,115**	**8,162**	**8,128**	**8,138**	**8,129**	**8,213**
14 to 17 years old	212	205	187	146	150	154	144	117	179	92	118	123	164
18 and 19 years old	2,402	2,394	2,524	2,568	2,528	2,671	2,548	2,466	2,382	2,370	2,321	2,387	2,516
20 and 21 years old	2,017	1,993	1,844	2,060	2,108	2,064	2,151	2,342	2,267	2,148	2,178	2,109	2,098
22 to 24 years old	1,248	1,191	1,264	1,185	1,243	1,300	1,350	1,467	1,594	1,612	1,551	1,517	1,586
25 to 29 years old	716	660	658	650	670	667	770	830	731	839	869	908	902
30 to 34 years old	287	298	310	278	350	332	387	382	409	424	440	430	379
35 years old and over	217	335	333	344	389	474	471	513	598	643	660	653	568
Full-time men	**3,648**	**3,608**	**3,599**	**3,611**	**3,662**	**3,740**	**3,808**	**3,929**	**3,927**	**3,891**	**3,855**	**3,807**	**3,816**
14 to 17 years old	76	103	81	70	51	60	71	41	86	37	51	54	71
18 and 19 years old	1,132	1,169	1,250	1,228	1,171	1,289	1,230	1,141	1,130	1,079	1,081	1,091	1,111
20 and 21 years old	1,047	1,037	938	1,039	1,032	1,017	1,055	1,103	1,084	1,003	1,029	999	961
22 to 24 years old	769	701	691	649	723	696	742	817	854	896	811	789	853
25 to 29 years old	411	366	381	353	383	366	401	465	378	443	457	454	440
30 to 34 years old	136	140	150	139	158	151	156	174	174	180	193	183	143
35 years old and over	76	91	109	132	145	162	152	187	220	253	232	238	237
Full-time women	**3,451**	**3,468**	**3,521**	**3,620**	**3,775**	**3,921**	**4,013**	**4,186**	**4,235**	**4,237**	**4,283**	**4,321**	**4,398**
14 to 17 years old	135	102	107	76	99	93	73	76	93	55	67	69	93
18 and 19 years old	1,270	1,225	1,275	1,341	1,357	1,383	1,318	1,325	1,253	1,291	1,240	1,296	1,405
20 and 21 years old	970	956	906	1,021	1,076	1,047	1,096	1,239	1,183	1,145	1,149	1,111	1,137
22 to 24 years old	479	489	573	536	520	604	608	650	739	716	740	729	734
25 to 29 years old	306	294	277	296	287	301	369	364	353	396	412	455	462
30 to 34 years old	151	158	160	139	192	182	231	208	235	244	247	247	236
35 years old and over	141	244	223	211	244	311	319	325	377	390	428	415	331
Part-time	**5,144**	**5,172**	**5,384**	**5,536**	**5,619**	**5,878**	**5,998**	**6,244**	**6,325**	**6,177**	**6,141**	**6,133**	**6,087**
14 to 17 years old	31	41	19	117	29	32	32	9	7	35	19	25	65
18 and 19 years old	381	359	390	444	412	370	402	399	402	470	466	507	488
20 and 21 years old	492	511	460	591	559	487	610	578	616	526	546	596	544
22 to 24 years old	785	729	787	794	825	885	794	840	933	958	930	894	729
25 to 29 years old	1,135	1,207	1,235	1,096	1,070	1,312	1,213	1,242	1,254	1,163	1,116	1,212	1,222
30 to 34 years old	945	887	909	945	933	973	935	1,033	1,046	921	973	805	815
35 years old and over	1,374	1,438	1,586	1,549	1,790	1,819	2,012	2,143	2,068	2,104	2,091	2,093	2,222
Part-time men	**2,216**	**2,211**	**2,285**	**2,321**	**2,340**	**2,450**	**2,476**	**2,572**	**2,597**	**2,537**	**2,517**	**2,535**	**2,528**
14 to 17 years old	9	25	5	57	7	17	16	9	4	17	11	7	21
18 and 19 years old	172	161	178	199	172	144	191	158	176	210	220	246	231
20 and 21 years old	223	244	205	279	300	244	313	285	258	281	235	283	263
22 to 24 years old	370	320	377	346	408	388	365	415	417	448	427	365	323
25 to 29 years old	539	569	620	567	461	627	539	584	577	460	479	508	553
30 to 34 years old	437	392	395	381	431	411	381	440	453	404	408	378	337
35 years old and over	466	499	507	492	561	619	672	682	713	717	737	748	801
Part-time women	**2,927**	**2,961**	**3,098**	**3,214**	**3,278**	**3,428**	**3,521**	**3,671**	**3,728**	**3,640**	**3,624**	**3,598**	**3,558**
14 to 17 years old	22	16	14	61	22	15	17	0	3	18	8	18	45
18 and 19 years old	209	198	212	244	240	226	211	241	226	261	245	261	257
20 and 21 years old	270	267	255	312	260	243	297	294	358	245	311	313	282
22 to 24 years old	415	409	410	448	417	497	429	425	516	510	504	529	407
25 to 29 years old	596	638	615	528	609	685	674	658	677	702	637	704	669
30 to 34 years old	508	495	514	564	503	562	554	593	593	517	565	427	478
35 years old and over	908	939	1,079	1,056	1,229	1,200	1,340	1,461	1,355	1,386	1,354	1,345	1,421

NOTE: Historical numbers may differ from those in previous editions. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and U.S. Department of Commerce, Bureau of the Census, unpublished tabulations. (This table was prepared August 1998.)

Table 6B.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with middle alternative projections: Fall 1997 to fall 2009

(In thousands)

Sex and Age	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Men and women, total	**14,390**	**14,608**	**14,881**	**15,072**	**15,158**	**15,168**	**15,262**	**15,400**	**15,556**	**15,739**	**15,929**	**16,144**	**16,336**
14 to 17 years old	205	213	217	223	219	228	230	234	241	250	261	264	263
18 and 19 years old	3,037	3,192	3,319	3,379	3,429	3,402	3,430	3,510	3,550	3,606	3,692	3,815	3,903
20 and 21 years old	2,637	2,688	2,769	2,896	2,963	2,994	3,036	3,024	3,069	3,142	3,174	3,217	3,286
22 to 24 years old	2,226	2,165	2,204	2,227	2,273	2,335	2,387	2,447	2,481	2,495	2,529	2,558	2,592
25 to 29 years old	2,076	2,036	1,994	1,945	1,882	1,864	1,880	1,924	1,983	2,048	2,105	2,155	2,184
30 to 34 years old	1,213	1,224	1,231	1,242	1,257	1,256	1,250	1,238	1,224	1,205	1,211	1,229	1,259
35 years old and over	2,996	3,090	3,147	3,160	3,135	3,089	3,049	3,024	3,008	2,993	2,957	2,906	2,849
Men, total	**6,313**	**6,297**	**6,370**	**6,432**	**6,471**	**6,486**	**6,525**	**6,577**	**6,628**	**6,691**	**6,763**	**6,852**	**6,937**
14 to 17 years old	90	98	97	100	97	101	101	102	104	107	111	112	111
18 and 19 years old	1,358	1,402	1,455	1,479	1,503	1,493	1,504	1,537	1,551	1,570	1,604	1,655	1,692
20 and 21 years old	1,235	1,238	1,269	1,323	1,354	1,369	1,387	1,378	1,394	1,424	1,435	1,451	1,481
22 to 24 years old	1,128	1,077	1,088	1,095	1,117	1,148	1,172	1,198	1,211	1,212	1,226	1,239	1,253
25 to 29 years old	974	952	930	907	880	873	880	899	924	952	976	998	1,010
30 to 34 years old	495	499	499	501	506	504	501	493	486	476	477	483	494
35 years old and over	1,034	1,031	1,032	1,026	1,014	997	981	969	959	950	935	916	896
Women, total	**8,077**	**8,311**	**8,511**	**8,639**	**8,688**	**8,682**	**8,736**	**8,823**	**8,928**	**9,048**	**9,166**	**9,291**	**9,399**
14 to 17 years old	115	115	120	123	122	127	129	132	137	143	150	152	152
18 and 19 years old	1,679	1,790	1,864	1,900	1,926	1,909	1,926	1,973	1,999	2,036	2,088	2,160	2,211
20 and 21 years old	1,402	1,449	1,501	1,573	1,609	1,625	1,649	1,645	1,674	1,718	1,739	1,766	1,805
22 to 24 years old	1,098	1,088	1,116	1,132	1,156	1,186	1,215	1,249	1,271	1,282	1,303	1,319	1,339
25 to 29 years old	1,102	1,084	1,064	1,037	1,002	991	1,000	1,025	1,059	1,097	1,129	1,157	1,173
30 to 34 years old	718	725	733	741	751	752	750	744	738	728	734	747	765
35 years old and over	1,962	2,059	2,115	2,133	2,121	2,092	2,068	2,055	2,049	2,043	2,022	1,990	1,954
Full-time	**8,114**	**8,242**	**8,449**	**8,600**	**8,690**	**8,702**	**8,787**	**8,895**	**9,019**	**9,169**	**9,325**	**9,503**	**9,666**
14 to 17 years old	170	177	186	190	189	195	198	202	208	216	226	228	228
18 and 19 years old	2,554	2,712	2,837	2,899	2,948	2,927	2,953	3,024	3,061	3,112	3,188	3,295	3,372
20 and 21 years old	2,100	2,154	2,229	2,336	2,392	2,416	2,451	2,442	2,481	2,542	2,570	2,605	2,661
22 to 24 years old	1,468	1,403	1,416	1,421	1,444	1,478	1,507	1,544	1,567	1,577	1,600	1,618	1,640
25 to 29 years old	847	816	793	767	738	726	731	747	771	798	821	840	852
30 to 34 years old	382	385	386	386	387	382	377	371	367	361	362	367	375
35 years old and over	592	595	602	600	592	578	570	565	564	564	558	549	539
Full-time men	**3,757**	**3,738**	**3,801**	**3,852**	**3,894**	**3,907**	**3,942**	**3,980**	**4,019**	**4,067**	**4,123**	**4,194**	**4,262**
14 to 17 years old	78	79	82	83	82	84	85	85	87	90	93	93	93
18 and 19 years old	1,131	1,179	1,231	1,257	1,280	1,274	1,284	1,313	1,325	1,342	1,371	1,414	1,446
20 and 21 years old	975	981	1,008	1,053	1,079	1,091	1,105	1,098	1,111	1,135	1,143	1,156	1,180
22 to 24 years old	783	731	730	728	740	758	772	787	795	795	804	812	821
25 to 29 years old	417	402	390	378	366	361	364	371	381	392	402	411	416
30 to 34 years old	156	160	160	159	160	158	156	153	150	146	146	147	150
35 years old and over	218	206	200	193	187	181	176	173	170	168	165	161	157
Full-time women	**4,356**	**4,503**	**4,649**	**4,748**	**4,796**	**4,795**	**4,845**	**4,915**	**5,001**	**5,102**	**5,202**	**5,310**	**5,404**
14 to 17 years old	93	98	104	107	107	111	113	116	121	126	133	135	135
18 and 19 years old	1,423	1,533	1,606	1,642	1,667	1,653	1,669	1,711	1,737	1,771	1,817	1,881	1,926
20 and 21 years old	1,126	1,173	1,221	1,283	1,313	1,326	1,345	1,344	1,370	1,408	1,427	1,449	1,482
22 to 24 years old	685	671	686	693	705	720	736	757	772	781	796	806	819
25 to 29 years old	429	414	403	389	373	365	367	376	390	406	419	430	436
30 to 34 years old	226	226	227	227	227	224	221	219	217	215	216	220	225
35 years old and over	374	389	402	407	404	397	393	392	394	396	394	388	382
Part-time	**6,276**	**6,366**	**6,432**	**6,471**	**6,469**	**6,466**	**6,475**	**6,505**	**6,537**	**6,570**	**6,604**	**6,640**	**6,670**
14 to 17 years old	35	36	30	33	30	32	32	33	33	34	35	36	35
18 and 19 years old	483	480	482	480	481	475	477	486	489	494	504	520	531
20 and 21 years old	537	534	540	560	571	578	585	582	588	600	604	612	624
22 to 24 years old	758	763	788	805	829	857	879	903	914	918	930	940	952
25 to 29 years old	1,229	1,220	1,202	1,178	1,144	1,138	1,149	1,177	1,212	1,250	1,284	1,314	1,332
30 to 34 years old	831	839	845	856	870	874	873	866	857	844	849	863	884
35 years old and over	2,404	2,495	2,545	2,560	2,543	2,511	2,480	2,459	2,444	2,430	2,399	2,357	2,311
Part-time men	**2,556**	**2,559**	**2,569**	**2,581**	**2,577**	**2,579**	**2,583**	**2,597**	**2,610**	**2,624**	**2,640**	**2,659**	**2,675**
14 to 17 years old	12	18	14	17	15	17	16	17	17	18	18	18	18
18 and 19 years old	227	223	224	222	223	219	220	224	226	228	233	240	246
20 and 21 years old	260	257	261	270	275	278	282	280	283	289	292	295	301
22 to 24 years old	345	346	359	366	377	390	400	411	416	417	422	427	433
25 to 29 years old	556	550	540	529	514	511	516	528	543	559	574	587	595
30 to 34 years old	339	339	339	342	346	346	345	341	336	330	331	336	344
35 years old and over	816	824	832	833	827	816	805	796	789	782	770	755	739
Part-time women	**3,720**	**3,807**	**3,863**	**3,891**	**3,891**	**3,887**	**3,891**	**3,908**	**3,927**	**3,946**	**3,964**	**3,982**	**3,995**
14 to 17 years old	22	17	16	16	15	15	16	16	16	16	17	17	17
18 and 19 years old	256	256	258	257	259	256	257	262	263	266	271	279	285
20 and 21 years old	276	277	280	290	296	300	303	302	305	310	312	316	323
22 to 24 years old	413	417	430	439	451	467	479	492	499	501	507	513	520
25 to 29 years old	673	670	661	648	630	626	633	649	669	691	710	727	737
30 to 34 years old	491	500	506	514	524	528	528	525	521	514	518	527	540
35 years old and over	1,588	1,670	1,713	1,727	1,716	1,695	1,675	1,663	1,655	1,648	1,629	1,602	1,572

NOTE: Historical numbers may differ from those in previous editions. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys, Integrated Postsecondary Education Data System (IPEDS) surveys; and U.S. Department of Commerce, Bureau of the Census, unpublished tabulations. (This table was prepared August 1998.)

Table 7.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with low alternative projections: Fall 1989, 1994, 1997, 2004, and 2009

(In thousands)

Sex and Age	1989	1994	1997	2004	2009
Men and women, total	**13,539**	**14,279**	**14,390**	**15,301**	**16,049**
14 to 17 years old	185	138	205	232	257
18 and 19 years old	3,041	2,787	3,037	3,497	3,850
20 and 21 years old	2,550	2,724	2,637	3,015	3,239
22 to 24 years old	2,185	2,482	2,226	2,434	2,547
25 to 29 years old	1,979	1,985	2,076	1,910	2,142
30 to 34 years old	1,305	1,414	1,213	1,226	1,231
35 years old and over	2,293	2,750	2,996	2,988	2,784
Men, total	**6,190**	**6,372**	**6,313**	**6,571**	**6,887**
14 to 17 years old	77	62	90	102	110
18 and 19 years old	1,433	1,302	1,358	1,538	1,684
20 and 21 years old	1,261	1,264	1,235	1,381	1,475
22 to 24 years old	1,084	1,238	1,128	1,198	1,245
25 to 29 years old	993	936	974	897	1,001
30 to 34 years old	562	601	495	491	488
35 years old and over	782	969	1,034	963	884
Women, total	**7,349**	**7,907**	**8,077**	**8,730**	**9,162**
14 to 17 years old	108	75	115	130	147
18 and 19 years old	1,608	1,485	1,679	1,958	2,166
20 and 21 years old	1,290	1,461	1,402	1,633	1,764
22 to 24 years old	1,101	1,243	1,098	1,235	1,301
25 to 29 years old	986	1,049	1,102	1,013	1,141
30 to 34 years old	743	812	718	735	743
35 years old and over	1,511	1,781	1,962	2,026	1,901
Full-time	**7,661**	**8,138**	**8,114**	**8,889**	**9,512**
14 to 17 years old	154	118	170	200	222
18 and 19 years old	2,671	2,321	2,554	3,017	3,325
20 and 21 years old	2,064	2,178	2,100	2,440	2,623
22 to 24 years old	1,300	1,551	1,468	1,543	1,611
25 to 29 years old	667	869	847	750	838
30 to 34 years old	332	440	382	373	367
35 years old and over	474	660	592	566	526
Men, full-time	**3,740**	**3,855**	**3,757**	**4,003**	**4,254**
14 to 17 years old	60	51	78	85	92
18 and 19 years old	1,289	1,081	1,131	1,317	1,442
20 and 21 years old	1,017	1,029	975	1,104	1,178
22 to 24 years old	696	811	783	792	819
25 to 29 years old	366	457	417	375	416
30 to 34 years old	151	193	156	154	150
35 years old and over	162	232	218	175	157
Women, full-time	**3,921**	**4,283**	**4,356**	**4,886**	**5,258**
14 to 17 years old	93	67	93	114	130
18 and 19 years old	1,383	1,240	1,423	1,700	1,883
20 and 21 years old	1,047	1,149	1,126	1,336	1,445
22 to 24 years old	604	740	685	751	792
25 to 29 years old	301	412	429	375	422
30 to 34 years old	182	247	226	218	217
35 years old and over	311	428	374	391	369
Part-time	**5,878**	**6,141**	**6,276**	**6,413**	**6,538**
14 to 17 years old	32	19	35	32	35
18 and 19 years old	370	466	483	480	525
20 and 21 years old	487	546	537	574	616
22 to 24 years old	885	930	758	890	935
25 to 29 years old	1,312	1,116	1,229	1,160	1,304
30 to 34 years old	973	973	831	853	864
35 years old and over	1,819	2,091	2,404	2,422	2,258
Men, part-time	**2,450**	**2,517**	**2,556**	**2,568**	**2,633**
14 to 17 years old	17	11	12	17	18
18 and 19 years old	144	220	227	221	242
20 and 21 years old	244	235	260	277	297
22 to 24 years old	388	427	345	406	426
25 to 29 years old	627	479	556	522	585
30 to 34 years old	411	408	339	337	338
35 years old and over	619	737	816	788	727
Women, part-time	**3,428**	**3,624**	**3,720**	**3,844**	**3,905**
14 to 17 years old	15	8	22	15	17
18 and 19 years old	226	245	256	259	283
20 and 21 years old	243	311	276	297	319
22 to 24 years old	497	504	413	484	509
25 to 29 years old	685	637	673	638	719
30 to 34 years old	562	565	491	516	526
35 years old and over	1,200	1,354	1,588	1,635	1,532

NOTE: Historical numbers may differ from those in previous editions. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and U.S. Department of Commerce, Bureau of the Census, unpublished tabulations. (This table was prepared August 1998.)

Table 8.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with high alternative projections: Fall 1989, 1994, 1997, 2004, and 2009

(In thousands)

Sex and Age	1989	1994	1997	2004	2009
Men and women, total	**13,539**	**14,279**	**14,390**	**15,486**	**16,687**
14 to 17 years old	185	138	205	236	271
18 and 19 years old	3,041	2,787	3,037	3,518	3,971
20 and 21 years old	2,550	2,724	2,637	3,029	3,348
22 to 24 years old	2,185	2,482	2,226	2,457	2,650
25 to 29 years old	1,979	1,985	2,076	1,936	2,235
30 to 34 years old	1,305	1,414	1,213	1,249	1,290
35 years old and over	2,293	2,750	2,996	3,061	2,921
Men, total	**6,190**	**6,372**	**6,313**	**6,576**	**7,008**
14 to 17 years old	77	62	90	102	112
18 and 19 years old	1,433	1,302	1,358	1,534	1,705
20 and 21 years old	1,261	1,264	1,235	1,374	1,493
22 to 24 years old	1,084	1,238	1,128	1,196	1,266
25 to 29 years old	993	936	974	900	1,023
30 to 34 years old	562	601	495	495	500
35 years old and over	782	969	1,034	976	909
Women, total	**7,349**	**7,907**	**8,077**	**8,910**	**9,679**
14 to 17 years old	108	75	115	134	159
18 and 19 years old	1,608	1,485	1,679	1,985	2,266
20 and 21 years old	1,290	1,461	1,402	1,655	1,855
22 to 24 years old	1,101	1,243	1,098	1,261	1,384
25 to 29 years old	986	1,049	1,102	1,036	1,212
30 to 34 years old	743	812	718	754	790
35 years old and over	1,511	1,781	1,962	2,085	2,012
Full-time	**7,661**	**8,138**	**8,114**	**8,880**	**9,895**
14 to 17 years old	154	118	170	203	235
18 and 19 years old	2,671	2,321	2,554	3,026	3,436
20 and 21 years old	2,064	2,178	2,100	2,439	2,718
22 to 24 years old	1,300	1,551	1,468	1,541	1,682
25 to 29 years old	667	869	847	741	877
30 to 34 years old	332	440	382	369	387
35 years old and over	474	660	592	561	559
Men, full-time	**3,740**	**3,855**	**3,757**	**3,948**	**4,294**
14 to 17 years old	60	51	78	85	94
18 and 19 years old	1,289	1,081	1,131	1,307	1,456
20 and 21 years old	1,017	1,029	975	1,090	1,188
22 to 24 years old	696	811	783	780	828
25 to 29 years old	366	457	417	365	419
30 to 34 years old	151	193	156	150	151
35 years old and over	162	232	218	170	158
Women, full-time	**3,921**	**4,283**	**4,356**	**4,932**	**5,601**
14 to 17 years old	93	67	93	118	142
18 and 19 years old	1,383	1,240	1,423	1,719	1,980
20 and 21 years old	1,047	1,149	1,126	1,349	1,530
22 to 24 years old	604	740	685	761	854
25 to 29 years old	301	412	429	375	458
30 to 34 years old	182	247	226	218	236
35 years old and over	311	428	374	391	401
Part-time	**5,878**	**6,141**	**6,276**	**6,606**	**6,792**
14 to 17 years old	32	19	35	33	36
18 and 19 years old	370	466	483	492	535
20 and 21 years old	487	546	537	590	630
22 to 24 years old	885	930	758	916	968
25 to 29 years old	1,312	1,116	1,229	1,195	1,358
30 to 34 years old	973	973	831	880	903
35 years old and over	1,819	2,091	2,404	2,499	2,362
Men, part-time	**2,450**	**2,517**	**2,556**	**2,628**	**2,714**
14 to 17 years old	17	11	12	17	18
18 and 19 years old	144	220	227	227	249
20 and 21 years old	244	235	260	284	305
22 to 24 years old	388	427	345	416	439
25 to 29 years old	627	479	556	534	604
30 to 34 years old	411	408	339	345	349
35 years old and over	619	737	816	805	750
Women, part-time	**3,428**	**3,624**	**3,720**	**3,978**	**4,078**
14 to 17 years old	15	8	22	16	18
18 and 19 years old	226	245	256	265	286
20 and 21 years old	243	311	276	306	325
22 to 24 years old	497	504	413	500	529
25 to 29 years old	685	637	673	661	755
30 to 34 years old	562	565	491	535	554
35 years old and over	1,200	1,354	1,588	1,694	1,611

NOTE: Historical numbers may differ from those in previous editions. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and U.S. Department of Commerce, Bureau of the Census, unpublished tabulations. (This table was prepared August 1998.)

Table 9.—Total enrollment in all institutions of higher education, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	12,242	3,648	2,216	3,451	2,927
1985	12,247	3,608	2,211	3,468	2,961
1986	12,504	3,599	2,285	3,521	3,098
1987	12,767	3,611	2,321	3,620	3,214
1988	13,055	3,662	2,340	3,775	3,278
1989	13,539	3,740	2,450	3,921	3,428
1990	13,819	3,808	2,476	4,013	3,521
1991	14,359	3,929	2,572	4,186	3,671
1992	14,487	3,927	2,597	4,235	3,728
1993	14,305	3,891	2,537	4,237	3,640
1994	14,279	3,855	2,517	4,283	3,624
1995	14,262	3,807	2,535	4,321	3,598
1996	14,300	3,816	2,528	4,398	3,558
1997[1]	14,390	3,757	2,556	4,356	3,720
Middle alternative projections					
1998	14,608	3,738	2,559	4,503	3,807
1999	14,881	3,801	2,569	4,649	3,863
2000	15,072	3,852	2,581	4,748	3,891
2001	15,158	3,894	2,577	4,796	3,891
2002	15,168	3,907	2,579	4,795	3,887
2003	15,262	3,942	2,583	4,845	3,891
2004	15,400	3,980	2,597	4,915	3,908
2005	15,556	4,019	2,610	5,001	3,927
2006	15,739	4,067	2,624	5,102	3,946
2007	15,929	4,123	2,640	5,202	3,964
2008	16,144	4,194	2,659	5,310	3,982
2009	16,336	4,262	2,675	5,404	3,995
Low alternative projections					
1998	14,639	3,750	2,557	4,527	3,804
1999	14,931	3,825	2,564	4,691	3,851
2000	15,104	3,880	2,571	4,786	3,868
2001	15,162	3,923	2,562	4,821	3,856
2002	15,142	3,937	2,558	4,805	3,841
2003	15,201	3,969	2,559	4,837	3,836
2004	15,301	4,003	2,568	4,886	3,844
2005	15,414	4,035	2,578	4,945	3,856
2006	15,555	4,077	2,589	5,021	3,869
2007	15,709	4,126	2,602	5,097	3,882
2008	15,889	4,191	2,619	5,184	3,895
2009	16,049	4,254	2,633	5,258	3,905
High alternative projections					
1998	14,578	3,727	2,560	4,481	3,811
1999	14,822	3,773	2,574	4,599	3,875
2000	15,015	3,815	2,591	4,693	3,916
2001	15,117	3,851	2,593	4,744	3,928
2002	15,147	3,862	2,600	4,750	3,936
2003	15,285	3,900	2,610	4,824	3,951
2004	15,486	3,948	2,628	4,932	3,978
2005	15,717	4,003	2,644	5,066	4,004
2006	15,970	4,070	2,660	5,214	4,026
2007	16,214	4,139	2,677	5,352	4,045
2008	16,468	4,220	2,697	5,488	4,064
2009	16,687	4,294	2,714	5,601	4,078

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Table 10.—Total enrollment in public 4-year institutions of higher education, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Fuil-time	Part-time	Full-time	Part-time
1984	5,198	1,880	694	1,749	874
1985	5,210	1,864	693	1,760	893
1986	5,300	1,865	706	1,792	937
1987	5,432	1,882	723	1,854	973
1988	5,546	1,910	722	1,932	982
1989	5,694	1,938	743	1,997	1,017
1990	5,848	1,982	764	2,051	1,050
1991	5,905	2,006	765	2,083	1,051
1992	5,900	2,005	760	2,090	1,045
1993	5,852	1,989	750	2,085	1,027
1994	5,825	1,966	738	2,100	1,022
1995	5,815	1,951	720	2,134	1,009
1996	5,807	1,943	704	2,163	997
1997[1]	5,852	1,916	735	2,146	1,056
Middle alternative projections					
1998	5,937	1,902	735	2,217	1,084
1999	6,059	1,932	738	2,289	1,100
2000	6,147	1,959	740	2,340	1,108
2001	6,193	1,981	739	2,365	1,107
2002	6,201	1,990	739	2,367	1,105
2003	6,247	2,009	740	2,393	1,105
2004	6,307	2,027	743	2,428	1,109
2005	6,378	2,047	746	2,471	1,114
2006	6,462	2,072	749	2,522	1,118
2007	6,546	2,100	753	2,571	1,123
2008	6,641	2,135	757	2,624	1,126
2009	6,729	2,169	760	2,671	1,128
Low alternative projections					
1998	5,954	1,908	734	2,229	1,083
1999	6,088	1,944	737	2,309	1,097
2000	6,171	1,974	737	2,358	1,101
2001	6,205	1,996	735	2,377	1,097
2002	6,202	2,005	733	2,372	1,092
2003	6,234	2,023	733	2,389	1,089
2004	6,277	2,039	735	2,413	1,091
2005	6,329	2,056	737	2,443	1,094
2006	6,394	2,077	739	2,482	1,096
2007	6,462	2,102	742	2,519	1,099
2008	6,542	2,133	746	2,562	1,101
2009	6,614	2,165	748	2,599	1,102
High alternative projections					
1998	5,921	1,896	735	2,206	1,085
1999	6,026	1,918	740	2,265	1,104
2000	6,111	1,941	743	2,313	1,115
2001	6,160	1,960	743	2,340	1,117
2002	6,175	1,967	745	2,345	1,119
2003	6,240	1,987	747	2,383	1,122
2004	6,328	2,011	752	2,436	1,129
2005	6,434	2,039	756	2,503	1,136
2006	6,552	2,073	760	2,577	1,142
2007	6,663	2,108	764	2,645	1,146
2008	6,778	2,148	768	2,712	1,150
2009	6,878	2,185	772	2,768	1,153

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 11.—Total enrollment in public 2-year institutions of higher education, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	4,279	762	1,138	756	1,623
1985	4,270	743	1,138	754	1,635
1986	4,414	742	1,193	764	1,715
1987	4,541	744	1,225	787	1,785
1988	4,615	746	1,231	822	1,817
1989	4,884	793	1,302	881	1,907
1990	4,996	811	1,318	906	1,962
1991	5,405	882	1,414	1,004	2,105
1992	5,485	878	1,431	1,037	2,138
1993	5,337	859	1,386	1,030	2,063
1994	5,308	848	1,379	1,038	2,044
1995	5,278	819	1,417	1,022	2,020
1996	5,283	825	1,416	1,033	2,009
1997[1]	5,362	825	1,411	1,039	2,087
Middle alternative projections					
1998	5,453	829	1,414	1,079	2,131
1999	5,543	848	1,419	1,115	2,161
2000	5,602	861	1,427	1,137	2,178
2001	5,624	871	1,427	1,147	2,179
2002	5,622	872	1,429	1,144	2,178
2003	5,647	879	1,432	1,154	2,182
2004	5,694	889	1,441	1,171	2,193
2005	5,741	897	1,449	1,190	2,204
2006	5,796	908	1,458	1,213	2,216
2007	5,857	922	1,469	1,237	2,228
2008	5,927	940	1,482	1,264	2,241
2009	5,986	956	1,493	1,286	2,251
Low alternative projections					
1998	5,458	832	1,413	1,085	2,129
1999	5,548	853	1,416	1,125	2,154
2000	5,598	866	1,422	1,146	2,164
2001	5,607	877	1,418	1,153	2,160
2002	5,594	878	1,417	1,146	2,153
2003	5,606	884	1,419	1,152	2,151
2004	5,640	893	1,425	1,164	2,157
2005	5,674	900	1,431	1,177	2,165
2006	5,717	910	1,439	1,194	2,174
2007	5,767	922	1,448	1,213	2,183
2008	5,827	939	1,460	1,234	2,193
2009	5,877	954	1,470	1,251	2,201
High alternative projections					
1998	5,448	827	1,415	1,073	2,133
1999	5,535	842	1,422	1,103	2,168
2000	5,602	853	1,433	1,124	2,192
2001	5,632	862	1,436	1,134	2,200
2002	5,642	862	1,441	1,133	2,206
2003	5,682	870	1,447	1,149	2,216
2004	5,748	883	1,459	1,175	2,232
2005	5,815	894	1,468	1,205	2,247
2006	5,887	909	1,479	1,240	2,260
2007	5,961	925	1,490	1,273	2,273
2008	6,040	946	1,503	1,307	2,285
2009	6,106	963	1,515	1,333	2,296

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys, Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Table 12.—Total enrollment in private 4-year institutions of higher education, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	2,513	926	346	839	401
1985	2,506	918	342	844	403
1986	2,524	910	343	856	414
1987	2,558	909	346	878	426
1988	2,634	933	347	918	436
1989	2,693	933	360	938	463
1990	2,730	944	361	959	466
1991	2,802	962	367	990	483
1992	2,865	970	375	1,017	503
1993	2,887	973	369	1,037	508
1994	2,924	978	367	1,063	516
1995	2,955	978	364	1,089	523
1996	2,996	991	358	1,130	517
1997[1]	2,953	956	370	1,091	536
Middle alternative projections					
1998	2,990	945	370	1,124	551
1999	3,047	957	372	1,159	559
2000	3,086	968	373	1,183	563
2001	3,105	977	371	1,195	562
2002	3,108	981	371	1,195	561
2003	3,129	989	371	1,208	561
2004	3,159	998	372	1,226	563
2005	3,194	1,008	374	1,247	565
2006	3,235	1,020	375	1,273	568
2007	3,276	1,033	376	1,297	570
2008	3,322	1,049	378	1,323	571
2009	3,363	1,065	379	1,347	572
Low alternative projections					
1998	2,999	949	370	1,130	550
1999	3,062	964	371	1,169	558
2000	3,099	976	371	1,193	560
2001	3,112	985	369	1,201	557
2002	3,109	989	368	1,198	554
2003	3,123	996	368	1,206	553
2004	3,144	1,004	368	1,218	554
2005	3,170	1,012	369	1,233	555
2006	3,201	1,022	370	1,252	556
2007	3,233	1,034	371	1,271	557
2008	3,271	1,049	372	1,292	558
2009	3,305	1,064	373	1,310	558
High alternative projections					
1998	2,982	942	370	1,118	551
1999	3,030	950	373	1,146	561
2000	3,068	958	374	1,169	566
2001	3,088	966	374	1,181	567
2002	3,094	969	374	1,184	568
2003	3,125	978	375	1,203	570
2004	3,169	989	377	1,230	573
2005	3,222	1,003	378	1,264	577
2006	3,281	1,020	380	1,301	580
2007	3,336	1,037	382	1,335	582
2008	3,391	1,056	384	1,368	583
2009	3,439	1,074	385	1,396	585

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Models. (This table was prepared August 1998.)

Table 13.—Total enrollment in private 2-year institutions of higher education, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	252	79	37	106	29
1985	261	84	38	110	30
1986	266	83	43	108	32
1987	235	76	28	102	29
1988	260	73	40	103	44
1989	267	76	45	105	41
1990	244	71	34	96	43
1991	247	80	27	109	32
1992	238	71	30	91	43
1993	229	70	31	85	43
1994	221	64	33	82	43
1995	215	60	33	77	45
1996	214	57	51	72	35
1997[1]	223	61	40	81	41
		Middle alternative projections			
1998	227	62	40	84	42
1999	232	63	40	87	42
2000	235	64	40	88	43
2001	237	65	40	89	43
2002	237	65	40	89	43
2003	238	65	40	90	43
2004	241	66	41	91	43
2005	243	67	41	92	43
2006	247	68	41	94	44
2007	250	69	41	96	44
2008	254	70	42	98	44
2009	257	71	42	100	44
		Low alternative projections			
1998	228	62	40	84	42
1999	233	63	40	87	42
2000	236	64	40	89	43
2001	237	65	40	90	42
2002	237	65	40	89	42
2003	238	66	40	89	42
2004	240	66	40	90	42
2005	241	67	40	91	43
2006	244	68	41	93	43
2007	247	69	41	94	43
2008	250	70	41	96	43
2009	253	71	42	97	43
		High alternative projections			
1998	227	62	40	83	42
1999	231	63	40	86	43
2000	234	63	40	87	43
2001	236	64	41	88	43
2002	236	64	41	88	43
2003	238	65	41	89	44
2004	242	66	41	91	44
2005	246	67	41	94	44
2006	250	68	42	96	44
2007	254	69	42	99	45
2008	259	70	42	101	45
2009	263	72	43	103	45

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Table 14.—Undergraduate enrollment in all institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	10,618	3,195	1,812	3,153	2,459
1985	10,597	3,156	1,806	3,163	2,471
1986	10,798	3,146	1,871	3,206	2,575
1987	11,046	3,164	1,905	3,299	2,679
1988	11,317	3,206	1,931	3,436	2,743
1989	11,743	3,279	2,032	3,562	2,869
1990	11,959	3,337	2,043	3,639	2,940
1991	12,439	3,436	2,135	3,786	3,082
1992	12,538	3,425	2,158	3,820	3,135
1993	12,324	3,382	2,102	3,797	3,043
1994	12,263	3,342	2,081	3,827	3,013
1995	12,232	3,297	2,105	3,849	2,982
1996	12,259	3,304	2,107	3,907	2,942
1997[+]	12,359	3,276	2,114	3,900	3,068
			Middle alternative projections		
1998	12,577	3,276	2,116	4,050	3,135
1999	12,842	3,346	2,126	4,191	3,179
2000	13,037	3,404	2,138	4,291	3,204
2001	13,137	3,450	2,137	4,342	3,207
2002	13,154	3,466	2,141	4,342	3,206
2003	13,247	3,499	2,147	4,389	3,211
2004	13,374	3,534	2,160	4,453	3,227
2005	13,515	3,569	2,173	4,530	3,244
2006	13,686	3,615	2,186	4,623	3,261
2007	13,862	3,666	2,202	4,715	3,279
2008	14,067	3,732	2,220	4,818	3,297
2009	14,253	3,797	2,237	4,907	3,312
			Low alternative projections		
1998	12,604	3,286	2,115	4,071	3,132
1999	12,884	3,365	2,122	4,227	3,170
2000	13,064	3,427	2,129	4,323	3,185
2001	13,139	3,475	2,124	4,362	3,178
2002	13,131	3,490	2,124	4,350	3,168
2003	13,195	3,521	2,126	4,381	3,166
2004	13,289	3,553	2,136	4,425	3,175
2005	13,394	3,582	2,146	4,479	3,186
2006	13,529	3,622	2,157	4,551	3,199
2007	13,674	3,668	2,171	4,623	3,212
2008	13,849	3,729	2,187	4,706	3,227
2009	14,007	3,789	2,202	4,777	3,238
			High alternative projections		
1998	12,552	3,266	2,117	4,031	3,138
1999	12,791	3,323	2,130	4,149	3,190
2000	12,988	3,374	2,146	4,244	3,225
2001	13,101	3,415	2,151	4,297	3,238
2002	13,136	3,428	2,159	4,304	3,246
2003	13,267	3,464	2,169	4,372	3,261
2004	13,448	3,508	2,186	4,469	3,285
2005	13,653	3,557	2,201	4,588	3,307
2006	13,883	3,617	2,217	4,724	3,326
2007	14,107	3,680	2,233	4,849	3,344
2008	14,345	3,755	2,252	4,975	3,363
2009	14,553	3,824	2,270	5,081	3,379

[+] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 15.—Undergraduate enrollment in public institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	8,493	2,390	1,600	2,325	2,179
1985	8,477	2,357	1,596	2,331	2,193
1986	8,661	2,351	1,652	2,367	2,291
1987	8,919	2,375	1,701	2,449	2,393
1988	9,103	2,399	1,714	2,550	2,439
1989	9,488	2,470	1,801	2,663	2,553
1990	9,710	2,527	1,826	2,734	2,623
1991	10,148	2,610	1,921	2,851	2,766
1992	10,216	2,602	1,935	2,883	2,797
1993	10,012	2,566	1,882	2,860	2,704
1994	9,945	2,532	1,863	2,875	2,676
1995	9,904	2,491	1,889	2,885	2,638
1996	9,905	2,491	1,877	2,920	2,618
1997[*]	10,018	2,477	1,890	2,924	2,727
			Middle alternative projections		
1998	10,193	2,478	1,892	3,036	2,786
1999	10,398	2,531	1,900	3,141	2,825
2000	10,548	2,575	1,911	3,215	2,847
2001	10,622	2,609	1,911	3,253	2,850
2002	10,634	2,620	1,914	3,252	2,849
2003	10,704	2,645	1,919	3,287	2,854
2004	10,804	2,672	1,931	3,334	2,868
2005	10,914	2,698	1,942	3,391	2,883
2006	11,046	2,733	1,954	3,461	2,898
2007	11,184	2,772	1,968	3,530	2,914
2008	11,343	2,822	1,985	3,607	2,930
2009	11,487	2,871	2,000	3,673	2,943
			Low alternative projections		
1998	10,212	2,486	1,891	3,052	2,783
1999	10,428	2,546	1,897	3,169	2,817
2000	10,565	2,592	1,903	3,240	2,830
2001	10,618	2,628	1,899	3,268	2,824
2002	10,610	2,639	1,898	3,258	2,815
2003	10,656	2,662	1,901	3,280	2,813
2004	10,730	2,686	1,910	3,314	2,821
2005	10,811	2,708	1,918	3,354	2,831
2006	10,915	2,738	1,928	3,407	2,843
2007	11,029	2,773	1,940	3,460	2,855
2008	11,165	2,820	1,955	3,523	2,868
2009	11,287	2,865	1,969	3,576	2,878
			High alternative projections		
1998	10,174	2,471	1,893	3,022	2,789
1999	10,362	2,514	1,904	3,109	2,835
2000	10,516	2,552	1,919	3,180	2,866
2001	10,601	2,583	1,923	3,219	2,877
2002	10,628	2,591	1,930	3,223	2,884
2003	10,729	2,619	1,939	3,273	2,898
2004	10,871	2,652	1,954	3,346	2,919
2005	11,030	2,689	1,968	3,435	2,938
2006	11,207	2,735	1,981	3,536	2,956
2007	11,380	2,782	1,996	3,630	2,972
2008	11,565	2,839	2,013	3,725	2,988
2009	11,726	2,892	2,029	3,803	3,002

[*] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Table 16.—Undergraduate enrollment in private institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	2,125	805	212	827	280
1985	2,120	800	210	832	278
1986	2,137	796	219	839	284
1987	2,128	788	204	850	286
1988	2,213	807	217	886	304
1989	2,255	808	231	899	316
1990	2,250	810	217	905	317
1991	2,291	825	215	935	316
1992	2,321	823	223	936	338
1993	2,312	816	220	937	338
1994	2,317	810	218	952	338
1995	2,328	806	216	963	344
1996	2,354	813	230	987	324
1997 [1]	2,341	799	224	976	341
Middle alternative projections					
1998	2,385	798	224	1,014	349
1999	2,444	815	225	1,050	354
2000	2,489	829	227	1,076	357
2001	2,514	841	227	1,090	357
2002	2,520	845	227	1,090	357
2003	2,543	854	228	1,103	358
2004	2,570	862	229	1,119	360
2005	2,601	871	231	1,138	361
2006	2,640	882	232	1,162	363
2007	2,679	894	234	1,185	365
2008	2,724	910	236	1,211	367
2009	2,766	926	237	1,234	369
Low alternative projections					
1998	2,392	800	224	1,019	349
1999	2,456	819	225	1,059	353
2000	2,499	835	226	1,084	355
2001	2,521	847	225	1,094	354
2002	2,522	851	225	1,092	353
2003	2,539	860	226	1,101	353
2004	2,559	867	227	1,112	354
2005	2,583	874	228	1,126	355
2006	2,613	884	229	1,144	356
2007	2,645	895	230	1,162	358
2008	2,684	909	232	1,183	359
2009	2,720	924	234	1,202	360
High alternative projections					
1998	2,378	796	224	1,009	349
1999	2,429	809	226	1,039	355
2000	2,473	822	227	1,064	359
2001	2,500	832	228	1,078	361
2002	2,508	836	229	1,081	362
2003	2,538	845	230	1,099	363
2004	2,577	856	232	1,123	366
2005	2,623	868	234	1,153	368
2006	2,676	883	235	1,187	370
2007	2,726	898	237	1,219	373
2008	2,780	916	239	1,250	375
2009	2,827	933	241	1,277	376

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 17.—Graduate enrollment in all institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	1,345	286	386	215	459
1985	1,376	289	388	220	479
1986	1,435	294	399	228	514
1987	1,452	294	400	233	525
1988	1,472	304	393	249	526
1989	1,522	309	401	263	548
1990	1,586	321	416	278	571
1991	1,639	341	419	300	578
1992	1,669	351	421	314	582
1993	1,688	355	416	334	584
1994	1,721	359	417	347	598
1995	1,732	356	412	361	604
1996	1,742	358	403	378	604
1997[*]	1,744	335	422	349	638
Middle alternative projections					
1998	1,750	322	423	346	659
1999	1,760	317	424	349	669
2000	1,758	312	424	349	673
2001	1,747	309	421	347	670
2002	1,740	308	419	346	667
2003	1,740	308	418	348	666
2004	1,749	311	418	353	667
2005	1,760	313	418	360	669
2006	1,770	315	418	365	670
2007	1,780	318	419	371	671
2008	1,787	321	419	376	671
2009	1,792	324	419	379	669
Low alternative projections					
1998	1,754	323	423	349	658
1999	1,765	320	424	354	668
2000	1,760	315	422	353	669
2001	1,746	312	419	350	664
2002	1,735	311	416	348	659
2003	1,730	312	414	348	656
2004	1,734	314	413	352	656
2005	1,740	315	413	356	656
2006	1,745	317	413	359	656
2007	1,751	319	413	363	656
2008	1,755	322	413	365	655
2009	1,756	324	412	367	652
High alternative projections					
1998	1,747	320	423	344	659
1999	1,754	314	425	344	671
2000	1,753	308	425	343	677
2001	1,745	304	423	341	676
2002	1,741	302	422	340	675
2003	1,746	304	422	345	676
2004	1,762	307	422	353	679
2005	1,782	311	424	365	683
2006	1,800	315	424	375	685
2007	1,816	320	425	385	687
2008	1,828	324	425	392	687
2009	1,835	327	425	397	685

[*] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Table 18.—Graduate enrollment in public institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	870	182	229	142	317
1985	890	181	232	144	333
1986	941	188	244	150	358
1987	945	185	244	152	364
1988	949	193	236	163	357
1989	978	195	242	171	369
1990	1,023	203	253	180	388
1991	1,050	215	255	192	388
1992	1,058	221	253	200	384
1993	1,064	221	252	207	383
1994	1,075	220	251	214	388
1995	1,074	218	246	221	389
1996	1,068	216	240	226	386
1997[1]	1,085	205	253	213	413
			Middle alternative projections		
1998	1,089	197	254	212	426
1999	1,096	194	254	214	433
2000	1,094	191	254	213	435
2001	1,088	189	252	212	434
2002	1,083	189	251	211	432
2003	1,083	189	250	213	431
2004	1,088	190	250	216	432
2005	1,096	192	250	220	433
2006	1,101	193	251	223	434
2007	1,108	195	251	227	434
2008	1,112	197	251	230	434
2009	1,115	199	251	232	433
			Low alternative projections		
1998	1,091	198	253	213	426
1999	1,099	196	254	217	432
2000	1,096	193	253	216	433
2001	1,086	191	251	214	430
2002	1,080	191	249	213	427
2003	1,077	191	248	213	424
2004	1,079	192	247	215	424
2005	1,083	193	247	217	425
2006	1,086	194	247	220	425
2007	1,090	196	247	222	425
2008	1,092	197	247	223	424
2009	1,092	199	247	224	422
			High alternative projections		
1998	1,087	196	254	210	427
1999	1,092	192	255	210	434
2000	1,091	189	255	210	438
2001	1,086	186	254	209	438
2002	1,084	185	253	208	437
2003	1,087	186	252	211	437
2004	1,097	188	253	216	440
2005	1,110	191	254	223	442
2006	1,120	193	254	229	444
2007	1,130	196	255	235	444
2008	1,137	198	255	240	444
2009	1,142	200	255	243	443

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 19.—Graduate enrollment in private institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	475	104	156	75	142
1985	486	108	156	76	147
1986	494	106	155	78	156
1987	507	108	156	82	161
1988	522	111	157	86	168
1989	544	114	159	92	179
1990	563	118	163	98	184
1991	589	126	164	109	190
1992	611	130	168	114	198
1993	625	133	164	126	201
1994	647	138	166	133	210
1995	659	138	166	140	215
1996	675	142	163	152	218
1997[1]	660	130	169	135	225
			Middle alternative projections		
1998	661	125	170	134	232
1999	665	123	170	136	236
2000	664	121	170	135	237
2001	660	120	169	135	237
2002	657	119	168	134	236
2003	657	119	167	135	235
2004	660	120	167	137	235
2005	665	121	168	140	236
2006	668	122	168	142	237
2007	672	123	168	144	237
2008	675	124	168	146	237
2009	677	126	168	147	236
			Low alternative projections		
1998	663	125	170	135	232
1999	667	124	170	137	236
2000	665	122	169	137	236
2001	659	121	168	136	234
2002	655	121	167	135	233
2003	653	121	166	135	231
2004	655	121	166	136	231
2005	657	122	166	138	232
2006	659	123	166	139	232
2007	662	124	166	141	232
2008	663	125	165	142	231
2009	663	125	165	142	230
			High alternative projections		
1998	660	124	170	133	233
1999	662	121	170	134	237
2000	662	119	171	133	239
2001	658	118	170	132	239
2002	657	117	169	132	238
2003	659	118	169	134	238
2004	665	119	169	137	240
2005	673	120	170	142	241
2006	679	122	170	146	242
2007	686	124	170	149	242
2008	690	125	171	152	242
2009	693	127	171	154	242

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 20.—First-professional enrollment in all institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	279	166	19	83	10
1985	274	162	17	84	10
1986	270	159	15	87	9
1987	268	154	16	88	10
1988	267	151	16	90	10
1989	274	153	16	95	10
1990	273	150	17	96	11
1991	281	152	18	100	11
1992	281	151	18	101	11
1993	292	154	19	106	14
1994	295	155	19	108	12
1995	298	155	19	111	12
1996	298	154	18	113	12
1997[1]	286	146	19	108	13
Middle alternative projections					
1998	280	140	19	107	14
1999	279	138	19	108	14
2000	277	136	19	108	14
2001	275	134	19	107	14
2002	274	134	19	107	14
2003	275	134	19	108	14
2004	277	135	19	109	14
2005	281	136	19	111	14
2006	283	137	19	113	14
2007	286	139	19	115	14
2008	289	140	19	116	14
2009	291	141	19	117	14
Low alternative projections					
1998	282	141	19	108	14
1999	282	139	19	110	14
2000	280	137	19	109	14
2001	277	136	19	108	14
2002	276	136	19	108	14
2003	276	136	19	108	14
2004	278	137	19	109	14
2005	280	137	19	110	14
2006	281	138	19	111	14
2007	284	139	19	112	14
2008	285	140	19	113	14
2009	287	141	19	114	13
High alternative projections					
1998	279	140	19	106	14
1999	276	137	19	106	14
2000	273	134	19	106	14
2001	271	132	19	105	14
2002	270	132	19	105	14
2003	272	132	19	107	14
2004	276	134	19	109	14
2005	282	136	19	113	14
2006	287	137	19	116	14
2007	292	139	19	119	14
2008	296	141	19	121	14
2009	299	142	19	123	14

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 21.—First-professional enrollment in public institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	114	70	3	38	2
1985	112	69	3	38	2
1986	112	67	3	39	2
1987	110	65	3	40	2
1988	109	64	2	41	2
1989	113	65	2	43	2
1990	112	63	3	44	2
1991	111	62	3	45	2
1992	111	61	3	45	2
1993	114	61	3	47	3
1994	114	61	3	48	2
1995	115	61	3	49	2
1996	116	61	3	50	2
1997[1]	111	58	3	48	2
Middle alternative projections					
1998	109	56	3	48	2
1999	108	55	3	48	3
2000	107	54	3	48	3
2001	107	53	3	48	3
2002	106	53	3	48	3
2003	107	53	3	48	3
2004	108	54	3	49	3
2005	109	54	3	50	3
2006	110	55	3	50	3
2007	112	55	3	51	3
2008	113	56	3	52	3
2009	114	56	3	52	3
Low alternative projections					
1998	109	56	3	48	2
1999	109	55	3	49	3
2000	109	55	3	49	3
2001	108	54	3	48	3
2002	107	54	3	48	3
2003	107	54	3	48	2
2004	108	54	3	48	2
2005	109	55	3	49	2
2006	109	55	3	49	2
2007	110	55	3	50	2
2008	111	56	3	50	2
2009	112	56	3	51	2
High alternative projections					
1998	108	55	3	47	2
1999	107	54	3	47	3
2000	106	53	3	47	3
2001	105	53	3	47	3
2002	105	52	3	47	3
2003	105	53	3	47	3
2004	107	53	3	49	3
2005	109	54	3	50	3
2006	112	55	3	52	3
2007	114	55	3	53	3
2008	115	56	3	54	3
2009	117	57	3	55	3

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Table 22.—First-professional enrollment in private institutions, by sex and attendance status, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1984	165	96	16	43	8
1985	162	93	14	46	8
1986	158	91	12	48	7
1987	158	88	14	48	8
1988	158	87	14	49	8
1989	162	87	14	52	9
1990	162	86	15	52	9
1991	169	90	15	55	9
1992	170	90	15	56	9
1993	179	93	16	59	11
1994	181	94	16	60	10
1995	183	94	16	62	10
1996	181	93	16	62	10
1997[*]	175	88	16	60	11
Middle alternative projections					
1998	171	85	16	59	11
1999	171	83	16	60	11
2000	170	82	16	60	11
2001	168	81	16	60	11
2002	168	81	16	59	11
2003	168	81	16	60	11
2004	170	82	16	61	11
2005	171	82	16	62	11
2006	173	83	16	63	11
2007	175	84	16	64	11
2008	176	84	16	65	11
2009	178	85	16	65	11
Low alternative projections					
1998	172	85	16	60	11
1999	172	84	16	61	11
2000	171	83	16	61	11
2001	170	82	16	60	11
2002	169	82	16	60	11
2003	169	82	16	60	11
2004	170	82	16	60	11
2005	171	83	16	61	11
2006	172	83	16	62	11
2007	173	84	16	62	11
2008	174	85	16	63	11
2009	175	85	16	63	11
High alternative projections					
1998	171	84	16	59	11
1999	169	82	16	59	11
2000	168	81	16	59	11
2001	166	80	16	59	11
2002	166	79	16	58	11
2003	167	80	16	59	11
2004	169	81	16	61	11
2005	172	82	16	63	12
2006	175	83	16	64	12
2007	178	84	16	66	12
2008	180	85	16	67	12
2009	182	86	16	68	12

[*] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 23.—Full-time-equivalent enrollment in all institutions of higher education, by level of student and type of institution, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1984	8,952	5,215	2,659	814	263
1985	8,943	5,204	2,649	829	261
1986	9,064	5,241	2,704	859	259
1987	9,230	5,363	2,743	868	256
1988	9,464	5,517	2,800	892	256
1989	9,781	5,628	2,967	922	265
1990	9,983	5,744	3,015	963	261
1991	10,361	5,804	3,279	1,010	267
1992	10,437	5,822	3,307	1,036	270
1993	10,351	5,787	3,230	1,056	278
1994	10,348	5,776	3,211	1,080	282
1995	10,335	5,798	3,162	1,091	284
1996	10,402	5,840	3,170	1,108	284
1997[1]	10,373	5,814	3,212	1,075	272
Middle alternative projections					
1998	10,533	5,924	3,276	1,067	265
1999	10,765	6,083	3,347	1,070	264
2000	10,930	6,209	3,393	1,066	262
2001	11,018	6,285	3,415	1,058	260
2002	11,030	6,303	3,413	1,055	259
2003	11,118	6,367	3,434	1,056	260
2004	11,237	6,439	3,470	1,064	263
2005	11,372	6,526	3,506	1,074	266
2006	11,534	6,633	3,550	1,083	269
2007	11,702	6,739	3,599	1,092	272
2008	11,893	6,863	3,656	1,100	275
2009	12,066	6,980	3,704	1,105	277
Low alternative projections					
1998	10,568	5,945	3,284	1,071	267
1999	10,825	6,121	3,360	1,077	267
2000	10,984	6,245	3,403	1,072	265
2001	11,054	6,311	3,418	1,062	262
2002	11,046	6,319	3,410	1,056	261
2003	11,108	6,369	3,423	1,055	262
2004	11,197	6,424	3,450	1,060	263
2005	11,296	6,489	3,476	1,066	265
2006	11,422	6,574	3,510	1,070	267
2007	11,558	6,662	3,550	1,077	269
2008	11,720	6,768	3,599	1,081	271
2009	11,864	6,868	3,640	1,084	273
High alternative projections					
1998	10,501	5,904	3,269	1,064	264
1999	10,694	6,039	3,331	1,062	261
2000	10,850	6,157	3,377	1,057	259
2001	10,942	6,233	3,402	1,051	256
2002	10,964	6,256	3,405	1,048	255
2003	11,085	6,339	3,436	1,053	257
2004	11,258	6,443	3,487	1,067	261
2005	11,462	6,570	3,541	1,084	267
2006	11,690	6,717	3,602	1,100	272
2007	11,911	6,856	3,664	1,115	277
2008	12,141	7,004	3,731	1,126	281
2009	12,339	7,136	3,785	1,134	284

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Table 24.—Full-time-equivalent enrollment in public institutions of higher education, by level of student and type of institution, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1984	6,685	3,605	2,447	521	111
1985	6,668	3,601	2,428	529	110
1986	6,778	3,629	2,483	556	110
1987	6,938	3,731	2,542	557	108
1988	7,097	3,827	2,591	571	107
1989	7,372	3,921	2,752	587	112
1990	7,558	4,015	2,818	615	109
1991	7,863	4,046	3,067	640	109
1992	7,912	4,037	3,114	652	109
1993	7,812	3,996	3,046	658	111
1994	7,784	3,971	3,035	665	113
1995	7,752	3,976	2,995	668	113
1996	7,775	3,984	3,008	669	114
1997 [1]	7,796	3,989	3,038	659	109
Middle alternative projections					
1998	7,923	4,064	3,098	655	107
1999	8,100	4,172	3,165	656	106
2000	8,225	4,258	3,208	654	105
2001	8,292	4,310	3,228	649	104
2002	8,300	4,323	3,226	647	104
2003	8,365	4,367	3,246	648	104
2004	8,454	4,416	3,280	653	106
2005	8,555	4,475	3,314	659	107
2006	8,675	4,548	3,355	664	108
2007	8,800	4,621	3,400	670	109
2008	8,945	4,705	3,454	675	111
2009	9,074	4,786	3,499	678	112
Low alternative projections					
1998	7,948	4,078	3,106	657	107
1999	8,142	4,198	3,177	661	107
2000	8,263	4,283	3,216	657	106
2001	8,316	4,328	3,231	652	105
2002	8,309	4,334	3,223	648	105
2003	8,355	4,368	3,235	647	105
2004	8,422	4,405	3,260	650	106
2005	8,495	4,450	3,285	654	107
2006	8,589	4,508	3,317	657	107
2007	8,691	4,568	3,354	661	108
2008	8,813	4,641	3,400	663	109
2009	8,922	4,709	3,438	665	110
High alternative projections					
1998	7,900	4,050	3,091	653	106
1999	8,049	4,142	3,150	652	105
2000	8,169	4,223	3,193	649	104
2001	8,239	4,275	3,217	645	103
2002	8,255	4,291	3,219	643	102
2003	8,345	4,347	3,248	646	103
2004	8,474	4,418	3,296	655	105
2005	8,624	4,505	3,347	665	107
2006	8,793	4,606	3,404	675	109
2007	8,958	4,701	3,462	684	112
2008	9,130	4,801	3,524	691	113
2009	9,277	4,892	3,575	696	114

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

Table 25.—Full-time-equivalent enrollment in private institutions of higher education, by level of student and type of institution, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1984	2,267	1,610	212	293	152
1985	2,276	1,603	221	300	151
1986	2,286	1,613	221	303	149
1987	2,292	1,632	201	311	148
1988	2,367	1,690	209	321	149
1989	2,409	1,707	216	335	153
1990	2,425	1,729	197	348	152
1991	2,498	1,758	212	370	158
1992	2,525	1,785	194	384	161
1993	2,539	1,791	184	398	167
1994	2,564	1,805	176	415	169
1995	2,583	1,822	168	423	171
1996	2,627	1,856	163	439	170
1997[1]	2,577	1,825	174	416	163
			Middle alternative projections		
1998	2,610	1,860	178	413	159
1999	2,665	1,911	182	414	158
2000	2,705	1,951	185	412	157
2001	2,726	1,975	187	409	156
2002	2,730	1,980	187	408	155
2003	2,752	2,000	188	408	156
2004	2,782	2,023	190	411	157
2005	2,817	2,051	193	415	159
2006	2,859	2,085	195	418	161
2007	2,901	2,118	198	422	162
2008	2,949	2,157	202	425	164
2009	2,992	2,194	205	427	165
			Low alternative projections		
1998	2,620	1,867	179	414	160
1999	2,682	1,923	183	416	160
2000	2,721	1,962	186	414	159
2001	2,738	1,983	187	410	157
2002	2,737	1,985	187	408	156
2003	2,753	2,001	188	408	156
2004	2,775	2,018	190	410	157
2005	2,801	2,039	191	412	159
2006	2,833	2,066	193	414	160
2007	2,867	2,094	196	416	161
2008	2,906	2,127	199	418	162
2009	2,942	2,159	202	419	163
			High alternative projections		
1998	2,601	1,854	177	411	158
1999	2,645	1,897	181	411	157
2000	2,682	1,934	184	409	155
2001	2,703	1,958	185	406	153
2002	2,709	1,965	185	405	153
2003	2,740	1,992	187	407	154
2004	2,784	2,024	191	412	156
2005	2,837	2,065	194	419	160
2006	2,897	2,112	198	425	162
2007	2,954	2,156	202	431	165
2008	3,012	2,202	206	435	168
2009	3,062	2,244	210	438	169

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Fall Enrollment in Colleges and Universities" surveys; Integrated Postsecondary Education Data System (IPEDS) surveys; and Higher Education Enrollment Model. (This table was prepared August 1998.)

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Chapter 3

High School Graduates

The number of high school graduates is projected to increase 23 percent over the projection period, reflecting the overall rise in the 18-year-old population (figure 29). Increases in the number of graduates are expected for both public and private schools. The significant rise in the number of graduates reflects the increase in the 18-year-old population over the projection period, rather than changes in the graduation rates of 12th graders.

However, projections of graduates could be impacted by changes in policies affecting graduation requirements. Projections of public school graduates that have been produced over the past 15 years are less accurate than projections of public elementary and secondary enrollment, but more accurate than projections of earned degrees by level that NCES has published over the same time period. For more information, see appendix A2, page 141.

Average annual rate of change (in percent)

	1983–84 to 1996–97	Projected
		1996–97 to 2008–09
Total	-0.4	1.7
Public	-0.4	1.7
Private	-0.1	1.7

Average annual rate of change (in percent)

	1983–84 to 1990–91	1990–91 to 1996–97	Projected	
			1996–97 to 2002–03	2002–03 to 2008–09
Total	-1.4	0.9	2.0	1.4
Public	-1.6	1.0	2.0	1.4
Private	-0.2	0.5	2.0	1.4

Total High School Graduates

A high school graduate is defined as an individual who has received formal recognition from school authorities, by the granting of a diploma, for completing a prescribed course of studies at the secondary level school. This definition does not include other high school completers, high school equivalency recipients, or other diploma recipients.

The number of high school graduates from public and private schools decreased from 2.8 million in 1983–84 to 2.6 million in 1985–86 (table 26 and figure 30). After 1985–86, this number increased to 2.8 million in 1987–88. Then, it decreased to around 2.6 million in 1996–97, a decrease of 4 percent from 1983–84, or an average annual rate of decline of 0.4 percent. The total number of high school graduates is projected to rise to 3.2 million by 2008–09, an increase of 23 percent from 1996–97, or an average annual growth rate of 1.7 percent. During the projection period, the growth rate will be higher in the first half of the projection period (1996–97 to 2002–03) than the growth rate in the second half (2002–03 to 2008–09), 2.0 percent per year versus 1.4 percent per year.

High School Graduates, by Control of Institution

The number of graduates of public high schools decreased from 2.5 million in 1983–84 to 2.4 million in 1985–86 (figure 31). Then, it increased to 2.5 million in 1987–88 before declining to about 2.4 million in 1996–97, a decrease of 5 percent from 1983–84, or an average annual rate of decline of 0.4 percent. Over the projection period, public high school graduates are projected to increase to 2.9 million by 2008–09, an increase of 23 percent from 1996–97, or an average annual growth rate of 1.7 percent. During the projection period, the growth rate will be higher in the first half of the projection period (1996–97 to 2002–03) than the growth rate in the second half (2002–03 to 2008–09), 2.0 percent per year versus 1.4 percent per year (figure 32).

The number of graduates of private high schools is projected to increase from an estimated 276,000 in 1996–97 to 338,000 by 2008–09, an increase of 22 percent, or an average annual growth rate of 1.7 percent. During the projection period, the growth rate will be higher in the first half of the projection period (1996–97 to 2002–03) than the growth rate in the second half (2002–03 to 2008–09), 2.0 percent per year versus 1.4 percent per year.

Figure 29
18-year-old population, with projections: 1984 to 2009

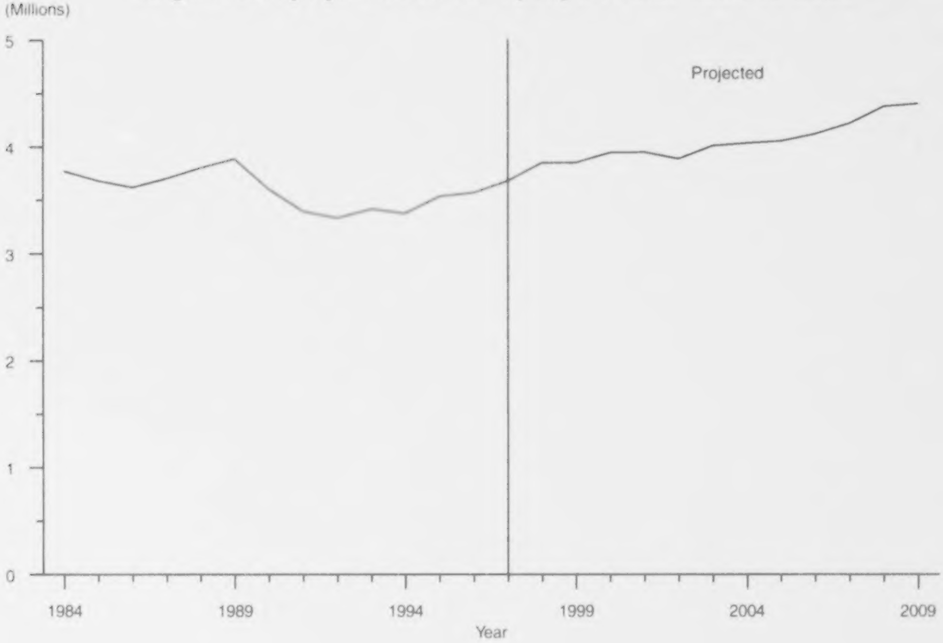

Figure 30
High school graduates, with projections: 1983-84 to 2008-09

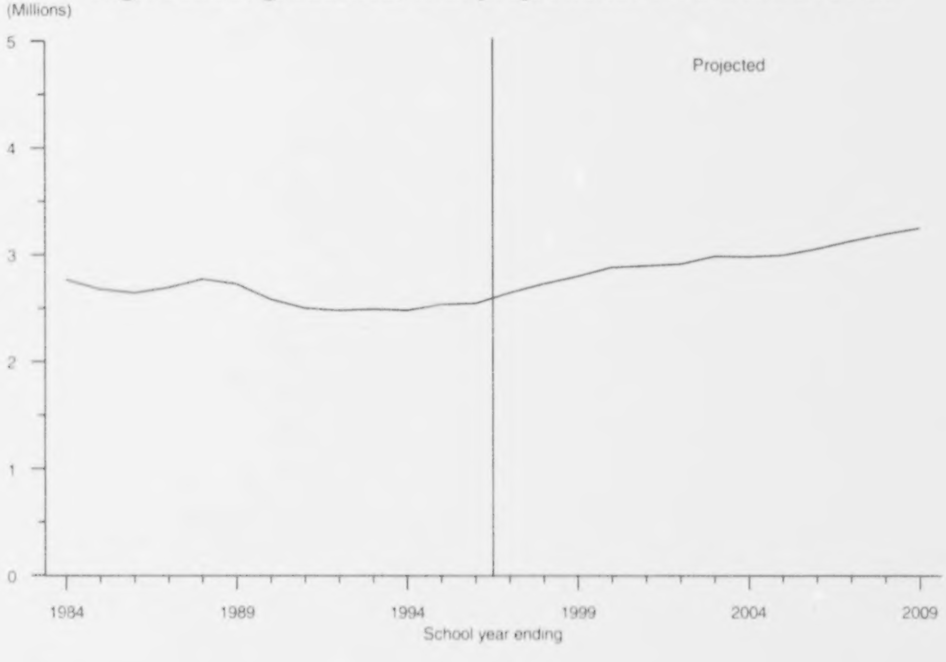

Figure 31
High school graduates, by control of institution, with projections: 1983-84 to 2008-09

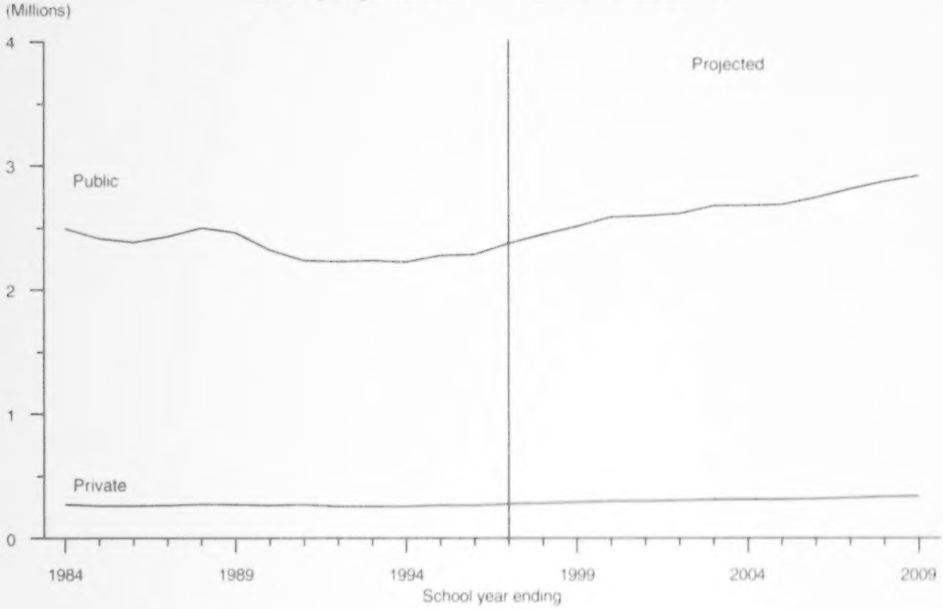

Figure 32
Average annual rates of change for high school graduates: 1983-84 to 2008-09

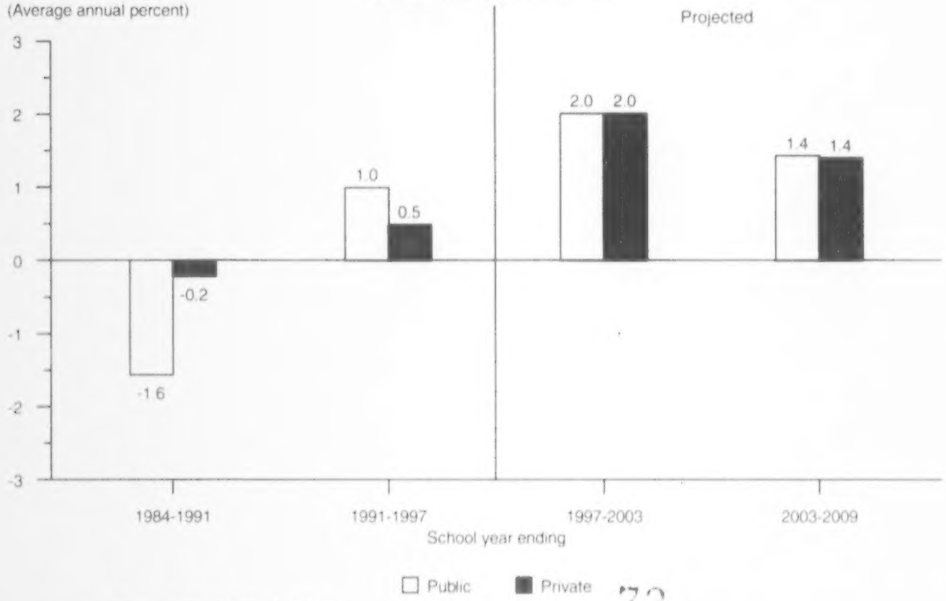

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Table 26.—High school graduates, by control of institution, with projections: 1983–84 to 2008–09

(In thousands)

Year ending	Total	Public	Private
1984	2,767	2,495	272
1985	2,677	2,414	263
1986	2,643	2,383	260
1987	2,694	2,429	265
1988	2,773	2,500	273
1989	2,727	2,459	268
1990	2,586	2,320	266
1991	2,503	2,235	268
1992	2,482	2,226	256
1993	2,490	2,233	[1]257
1994	2,479	2,221	[1]258
1995	2,538	2,274	[1]264
1996	2,548	2,281	[1]267
1997[1]	2,647	2,372	276
		Projected	
1998	2,729	2,445	284
1999	2,798	2,507	291
2000	2,883	2,583	300
2001	2,895	2,593	301
2002	2,910	2,607	303
2003	2,984	2,673	311
2004	2,982	2,672	311
2005	2,994	2,682	312
2006	3,054	2,736	318
2007	3,129	2,803	326
2008	3,195	2,862	333
2009	3,248	2,910	338

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Prior to 1989–90, numbers for private high school graduates were estimated by NCES. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; and National High School Graduates Model. (This table was prepared July 1999.)

Chapter 4

Earned Degrees Conferred

The historical growth in enrollment of women in institutions of higher education has led to a substantial increase in the number of earned degrees conferred. Between 1983–84 and 1996–97, the number of degrees awarded to women rose at all levels. In 1996–97, women earned the majority of associate's, bachelor's, and master's degrees, and two-fifths of doctor's and first-professional degrees. Over the projection period, the number of degrees awarded to men and women will continue to rise at most levels.

Projections of earned degrees by level and sex were based primarily on college-age populations and higher education enrollment by level enrolled and attendance status. There are many factors that affect future levels of earned degrees such as choice of degree, demand for occupations, etc. These factors were not included in the models used to develop the projections. Projections of earned degrees by level that have been produced over the last 13 years are less accurate than projections of public elementary and secondary enrollment, higher education enrollment, and public high school graduates that NCES has published over the same time period. For more information, see appendix A3, page 143.

Associate's Degrees

Between 1983–84 and 1984–85, the number of associate's degrees increased from 452,240 to 454,712. Thereafter, it decreased to 435,085 in 1987–88. Since then, it increased to an estimated 561,000 in 1996–97 (table 27 and figure 33). It is projected to increase to 628,000 by 2008–09, an increase of 12 percent from 1996–97. The number of associate's degrees awarded to men decreased from 202,932 in 1984–85 to 186,316 in 1988–89, before rising to an estimated 222,000 in 1996–97 (figure 34). This number is projected to increase to 236,000 by 2008–09. The number of associate's degrees awarded to women fell from 249,536 in 1983–84 to 245,038 in 1987–88. Thereafter, it increased to an estimated 339,000 in 1996–97, an increase of 36 percent from 1983–84. This number is projected to increase to 392,000 by 2008–09, an increase of 16 percent from 1996–97.

Bachelor's Degrees

The number of bachelor's degrees increased from 974,309 in 1983–84 to an estimated 1,160,000 in 1996–97, an increase of 19 percent (table 28 and figure 35). This number is expected to remain relatively stable between 1997–98 and 1999–2000, and then increase to 1,257,000 by 2008–09, an increase of 8 percent from 1996–97. The number of bachelor's degrees awarded to men increased from 482,319 in 1983–84 to 485,923 in 1985–86 and then declined for two years, before rising to 532,881 in 1992–93. Then, this number decreased to an estimated 520,000 in 1996–97 (figure 36). This number is expected to decrease to 505,000 by 2000–01 and then increase to 531,000 by 2008–09, an increase of 2 percent from 1996–97. The number of bachelor's degrees awarded to women increased from 491,990 in 1983–84 to an estimated 640,000 in 1996–97, an increase of 30 percent. This number is expected to increase to 725,000 by 2008–09, an increase of 13 percent from 1996–97.

Master's Degrees

The number of master's degrees increased from 284,263 in 1983–84 to an estimated 416,000 in 1996–97, an increase of 46 percent from 1983–84 (table 29 and figure 37). This number is expected to decrease to 379,000 in 2002–03 as the 25- to 34-year-old population is projected to decline during the projection period. Then, it is projected to increase to 400,000 by 2008–09. The number of master's degrees awarded to men decreased from 143,595 in 1983–84 to 141,269 in 1986–87. Then, it increased to an estimated 180,000 in 1996–97 (figure 38). This number is projected to decrease 159,000 in 2002–03 and then rise to 164,000 by 2008–09. The number of master's degrees awarded to women increased from 140,668 in 1983–84 to 236,000 in 1996–97. This number is expected to be around 236,000 in 2008–09.

Doctor's Degrees

The number of doctor's degrees increased from 33,209 in 1983–84 to about 44,900 in 1996–97, an increase of 35 percent (table 30 and figure 39). This number is expected to decrease to 43,400 in 2003–04 and then increase to 44,300 by 2008–09. The number of doctor's degrees awarded to men increased from 22,064 in 1983–84 to an estimated 26,800 in 1996–97. This number is expected to decrease to 26,100 by 2008–09 (figure 40). The number of doctor's degrees awarded to women rose from 11,145 in 1983–84 to an estimated 18,100 in 1996–97, an increase of 62 percent. The number of doctor's degrees awarded to women is projected to be 18,200 by 2008–09. The share of doctor's degrees awarded to women, which was 34 percent in 1983–84 and 40 percent in 1996–97, is projected to be 41 percent by 2008–09.

First-Professional Degrees

The number of first-professional degrees awarded rose from 74,468 in 1983–84 to 75,063 in 1984–85. Then, it decreased to 70,735 in 1987–88. Thereafter, it increased to about 77,700 in 1996–97 (table 31 and figure 41). This number is expected to increase to 78,100 in 1997–98 and then decrease to 71,300 in 2003–04. Thereafter, it will increase to 74,300 by 2008–09. The number of first-professional degrees awarded to men decreased from 51,378 in 1983–84 to 43,846 in 1990–91 (figure 42). Then, it increased to an estimated 45,000 in 1996–97. This number is projected to decrease to 39,400 by 2004–05. Thereafter, it is projected to increase to 40,300 by 2008–09. The number of first-professional degrees awarded to women increased from 23,090 in 1983–84 to an estimated 32,700 in 1996–97, an increase of 42 percent. This number is expected to increase to 34,000 by 2008–09, an increase of 4 percent from 1996–97. The women's proportion of first-professional degrees rose from 31 percent in 1983–84 to 42 percent in 1996–97. By 2008–09, this proportion is expected to rise to 46 percent.

Figure 33
Associate's degrees, with projections: 1983-84 to 2008-09

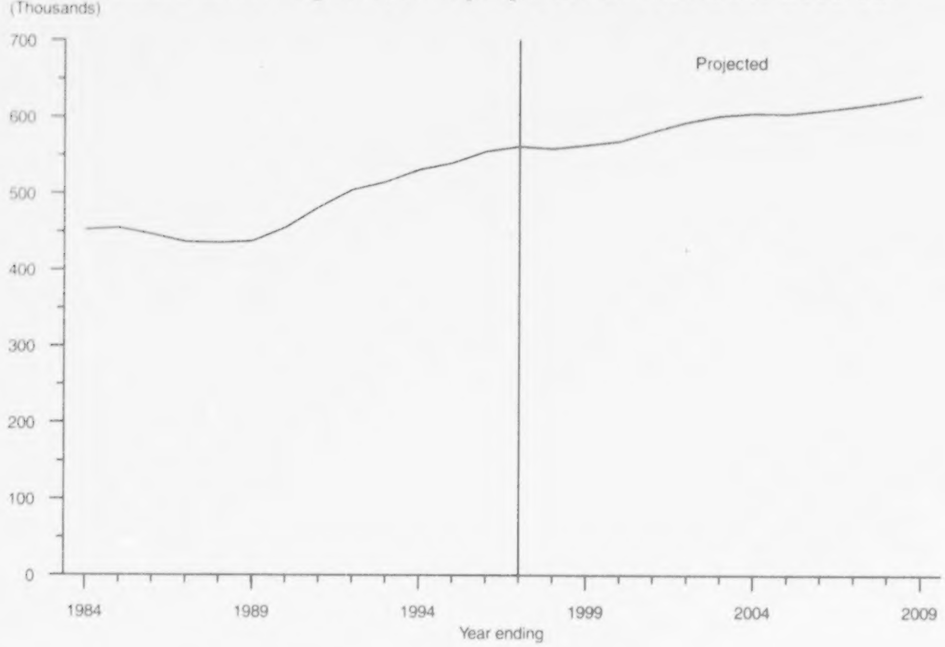

Figure 34
Associate's degrees, by sex of recipient, with projections: 1983-84 to 2008-09

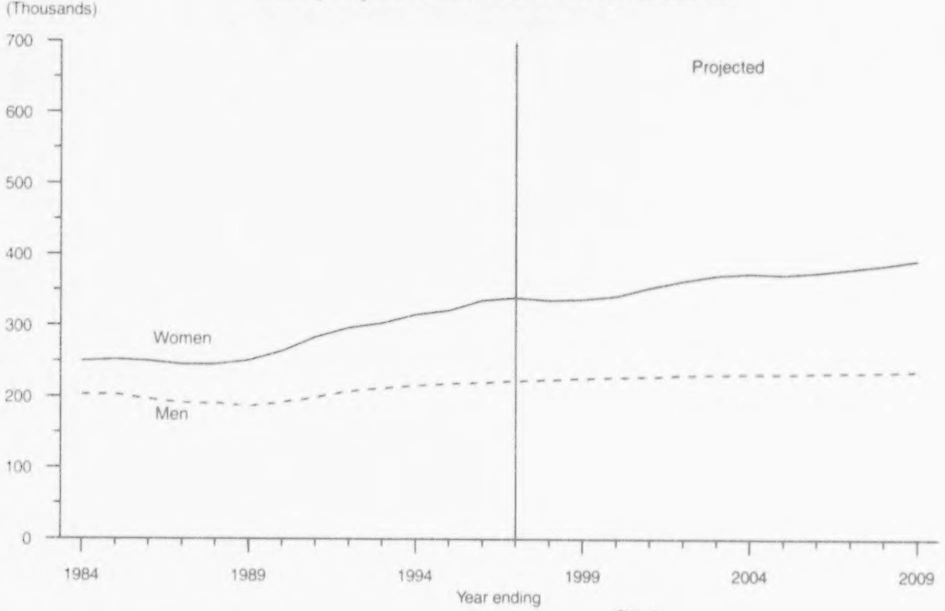

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Figure 35
Bachelor's degrees, with projections: 1983-84 to 2008-09

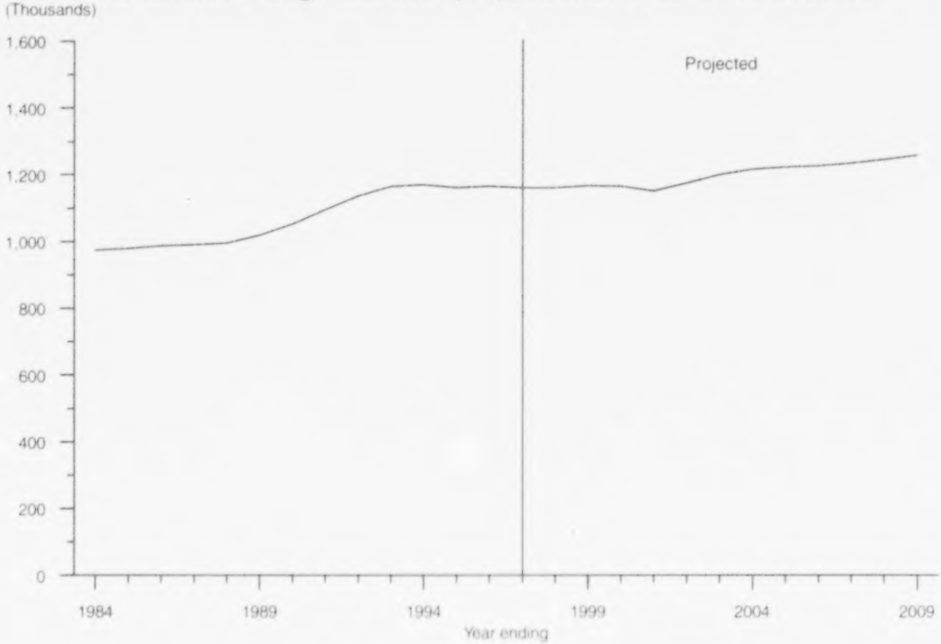

Figure 36
Bachelor's degrees, by sex of recipient, with projections: 1983-84 to 2008-09

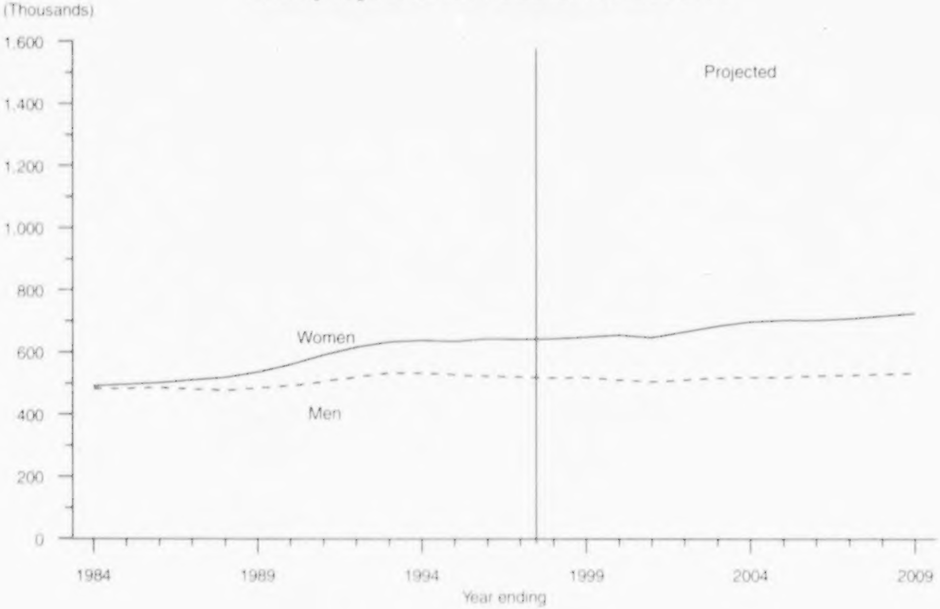

Figure 37
Master's degrees, with projections: 1983-84 to 2008-09

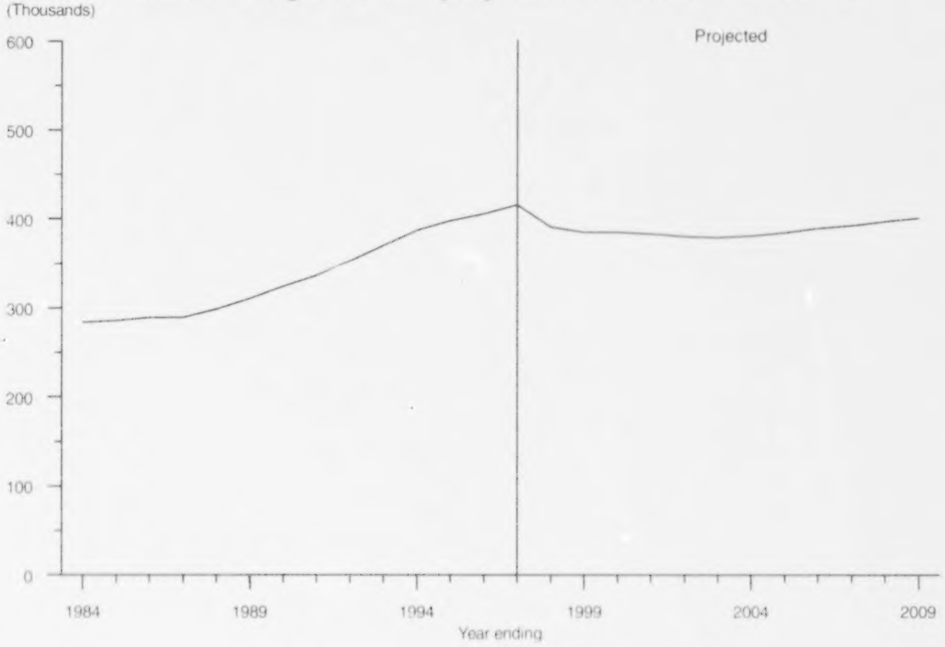

Figure 38
Master's degrees, by sex of recipient, with projections: 1983-84 to 2008-09

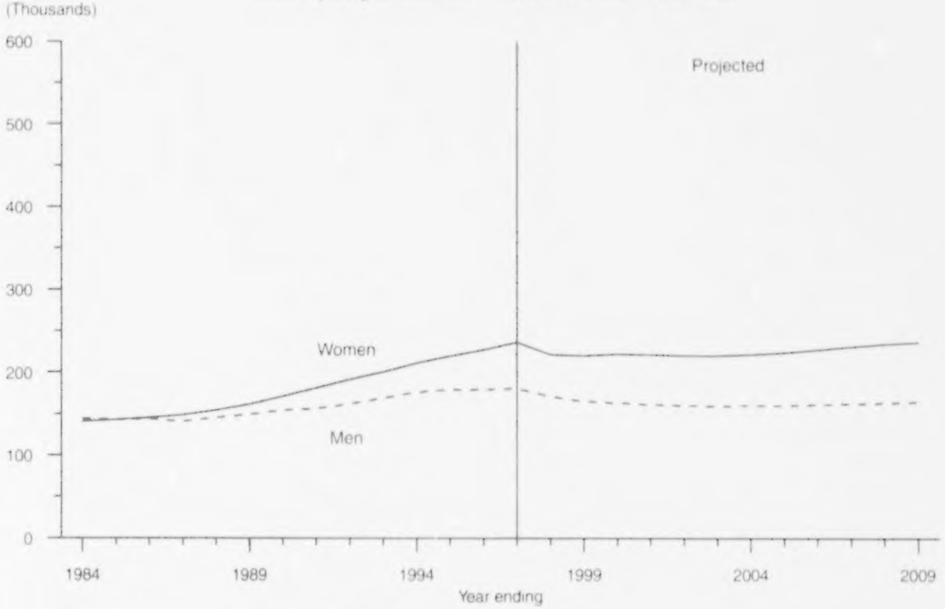

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Figure 39
Doctor's degrees, with projections: 1983-84 to 2008-09

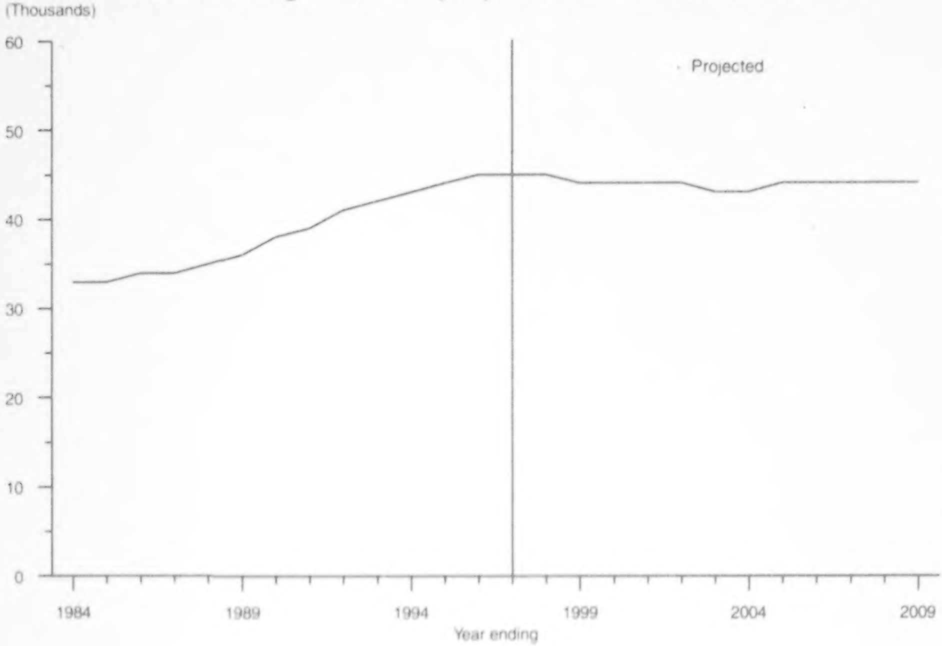

Figure 40
Doctor's degrees, by sex of recipient, with projections: 1983-84 to 2008-09

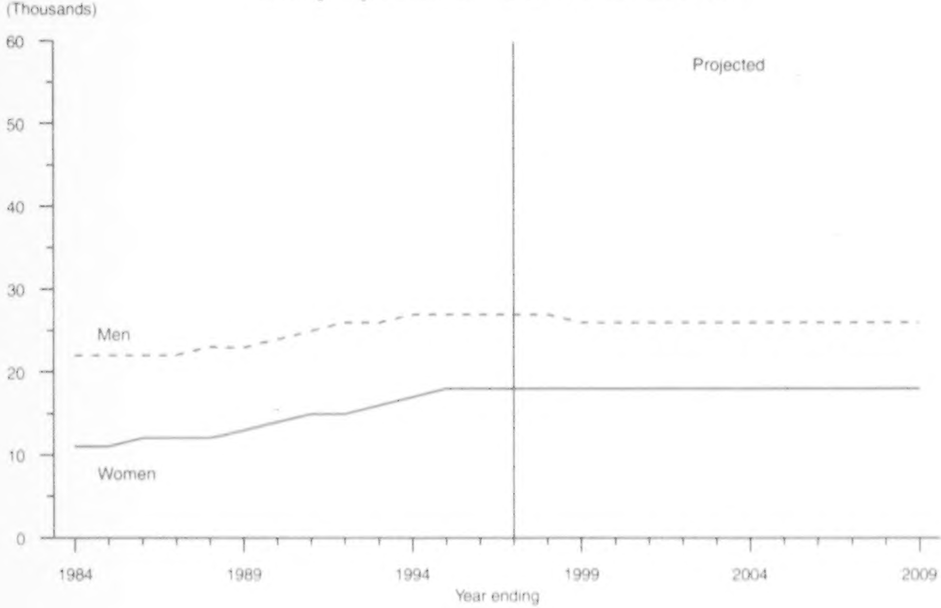

Figure 41
First-professional degrees, with projections: 1983-84 to 2008-09

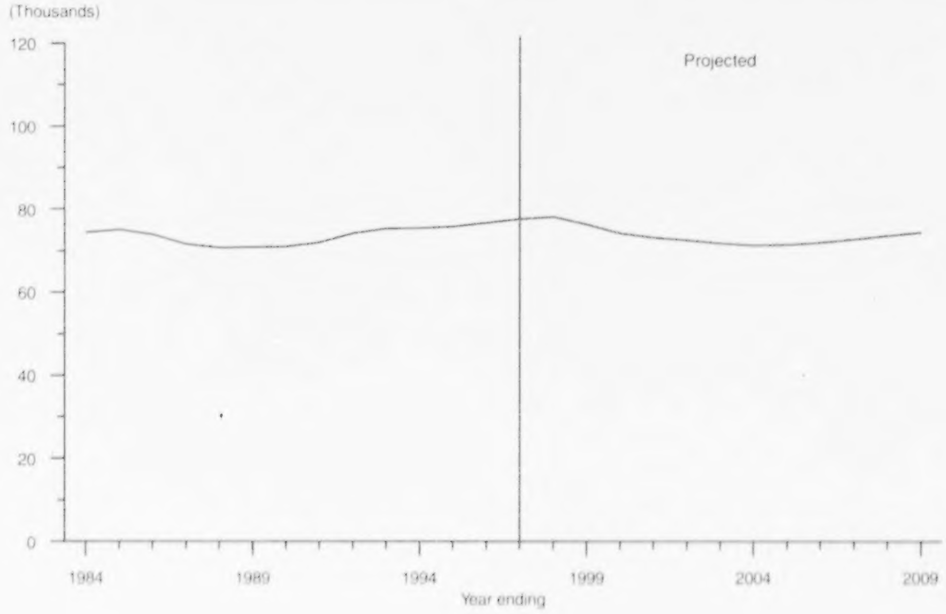

Figure 42
First-professional degrees, by sex of recipient, with projections: 1983-84 to 2008-09

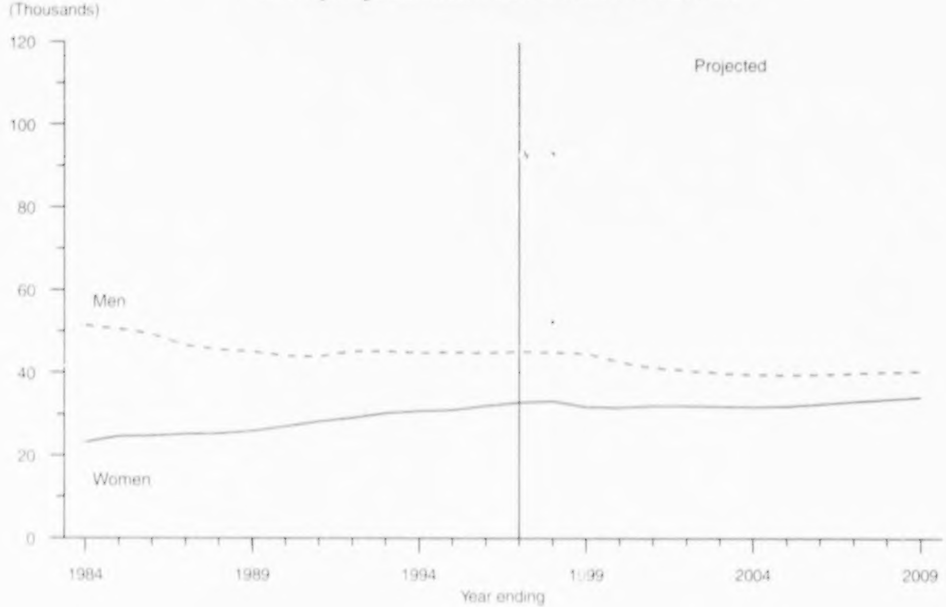

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Table 27.—Associate's degrees, by sex of recipient, with projections: 1983–84 to 2008–09

Year ending	Total	Men	Women
1984	452,240	202,704	249,536
1985	454,712	202,932	251,780
1986	446,047	196,166	249,881
1987	436,304	190,839	245,465
1988	435,085	190,047	245,038
1989	436,764	186,316	250,448
1990	455,102	191,195	263,907
1991	481,720	198,634	283,086
1992	504,231	207,481	296,750
1993	514,756	211,964	302,792
1994	530,632	215,261	315,371
1995	539,691	218,352	321,339
1996	555,216	219,514	335,702
1997[1]	561,000	222,000	339,000
		Projected	
1998	558,000	224,000	335,000
1999	563,000	226,000	337,000
2000	568,000	227,000	341,000
2001	581,000	228,000	353,000
2002	593,000	230,000	363,000
2003	601,000	231,000	370,000
2004	605,000	232,000	373,000
2005	604,000	232,000	372,000
2006	608,000	233,000	375,000
2007	614,000	234,000	380,000
2008	620,000	235,000	385,000
2009	628,000	236,000	392,000

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1995–96. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey; Integrated Postsecondary Education Data System (IPEDS), "Completions" survey; and Earned Degrees Conferred Model. (This table was prepared August 1998.)

Table 28.—Bachelor's degrees, by sex of recipient, with projections: 1983–84 to 2008–09

Year ending	Total	Men	Women
1984	974,309	482,319	491,990
1985	979,477	482,528	496,949
1986	987,823	485,923	501,900
1987	991,264	480,782	510,482
1988	994,829	477,203	517,626
1989	1,018,755	483,346	535,409
1990	1,051,344	491,696	559,648
1991	1,094,538	504,045	590,493
1992	1,136,553	520,811	615,742
1993	1,165,178	532,881	632,297
1994	1,169,275	532,422	636,853
1995	1,160,134	526,131	634,003
1996	1,164,792	522,454	642,338
1997*	1,160,000	520,000	640,000
		Projected	
1998	1,160,000	517,000	643,000
1999	1,166,000	518,000	648,000
2000	1,164,000	509,000	655,000
2001	1,150,000	505,000	645,000
2002	1,174,000	510,000	664,000
2003	1,199,000	516,000	684,000
2004	1,216,000	519,000	697,000
2005	1,222,000	519,000	703,000
2006	1,225,000	523,000	702,000
2007	1,233,000	525,000	708,000
2008	1,244,000	528,000	716,000
2009	1,257,000	531,000	725,000

* Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1995–96. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey; Integrated Postsecondary Education Data System (IPEDS), "Completions" survey; and Earned Degrees Conferred Model. (This table was prepared August 1998.)

Table 29.—Master's degrees, by sex of recipient, with projections: 1983–84 to 2008–09

Year ending	Total	Men	Women
1984	284,263	143,595	140,668
1985	286,251	143,390	142,861
1986	288,567	143,508	145,059
1987	289,349	141,269	148,080
1988	299,317	145,163	154,154
1989	310,621	149,354	161,267
1990	324,301	153,653	170,648
1991	337,168	156,482	180,686
1992	352,838	161,842	190,996
1993	369,585	169,258	200,327
1994	387,070	176,085	210,985
1995	397,629	178,598	219,031
1996	406,301	179,081	227,220
1997 +	416,000	180,000	236,000
		Projected	
1998	391,000	171,000	221,000
1999	385,000	165,000	220,000
2000	385,000	163,000	222,000
2001	383,000	161,000	221,000
2002	380,000	160,000	220,000
2003	379,000	159,000	220,000
2004	381,000	160,000	221,000
2005	384,000	160,000	224,000
2006	389,000	161,000	227,000
2007	392,000	162,000	231,000
2008	397,000	163,000	234,000
2009	400,000	164,000	236,000

+ Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1995–96. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey; Integrated Postsecondary Education Data System (IPEDS), "Completions" survey; and Earned Degrees Conferred Model. (This table was prepared August 1998.)

Table 30.—Doctor's degrees, by sex of recipient, with projections: 1983–84 to 2008–09

Year ending	Total	Men	Women
1984	33,209	22,064	11,145
1985	32,943	21,700	11,243
1986	33,653	21,819	11,834
1987	34,041	22,061	11,980
1988	34,870	22,615	12,255
1989	35,720	22,648	13,072
1990	38,371	24,401	13,970
1991	39,294	24,756	14,538
1992	40,659	25,557	15,102
1993	42,132	26,073	16,059
1994	43,185	26,552	16,633
1995	44,446	26,916	17,530
1996	44,652	26,841	17,811
1997[1]	44,900	26,800	18,100
		Projected	
1998	44,600	26,900	17,700
1999	44,100	26,300	17,700
2000	43,900	26,000	17,900
2001	43,800	25,900	17,900
2002	43,600	25,800	17,800
2003	43,400	25,700	17,700
2004	43,400	25,700	17,700
2005	43,500	25,800	17,800
2006	43,800	25,800	17,900
2007	44,000	25,900	18,100
2008	44,200	26,000	18,200
2009	44,300	26,100	18,200

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1995–96. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey; Integrated Postsecondary Education Data System (IPEDS), "Completions" survey; and Earned Degrees Conferred Model. (This table was prepared August 1998.)

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Table 31.—First-professional degrees, by sex of recipient, with projections: 1983–84 to 2008–09

Year ending	Total	Men	Women
1984	74,468	51,378	23,090
1985	75,063	50,455	24,608
1986	73,910	49,261	24,649
1987	71,617	46,523	25,094
1988	70,735	45,484	25,251
1989	70,856	45,046	25,810
1990	70,988	43,961	27,027
1991	71,948	43,846	28,102
1992	74,146	45,071	29,075
1993	75,387	45,153	30,234
1994	75,418	44,707	30,711
1995	75,800	44,853	30,947
1996	76,734	44,748	31,986
1997[1]	77,700	45,000	32,700
		Projected	
1998	78,100	44,900	33,100
1999	76,300	44,600	31,700
2000	74,200	42,500	31,600
2001	73,100	41,100	32,000
2002	72,500	40,500	32,000
2003	71,800	39,900	31,900
2004	71,300	39,500	31,700
2005	71,400	39,400	31,900
2006	71,900	39,500	32,400
2007	72,700	39,800	33,000
2008	73,600	40,100	33,500
2009	74,300	40,300	34,000

[1] Projected.

NOTE: Historical numbers may differ from those in previous editions. Projections are based on data through 1995–96. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey; Integrated Postsecondary Education Data System (IPEDS), "Completions" survey; and Earned Degrees Conferred Model. (This table was prepared August 1998.)

Chapter 5

Classroom Teachers

Between 1997 and 2009, the number of classroom teachers in elementary and secondary schools is projected to rise, primarily due to the increase in school enrollment during this period. Increases are expected in the numbers of both elementary and secondary teachers. The number of secondary teachers will increase at a faster rate than the number of elementary teachers. The numbers of both public and private teachers are projected to grow. The projections do not take into account increases in the number of teachers which would be due to the effects of the proposed initiative to reduce elementary class sizes.

Three alternative projections of the numbers of classroom teachers were developed to indicate a range of possible outcomes. These alternatives are based on different economic assumptions about the growth path for one of the key variables in the teacher model—education revenue receipts from state sources per capita. Under the middle alternative, education revenue receipts from state sources per capita is projected to increase by 8 percent between 1997 and 2009. The low alternative assumes that education revenue receipts from state sources per capita will increase by 2 percent over the projection period. The high alternative assumes that education revenue receipts from state sources per capita will increase by 14 percent during this period. The second variable in the teacher model, enrollment by organizational level, is the same for all three alternatives.

Average annual rate of change (in percent)

	1984–97	Projected 1997–2009		
		Low	Middle	High
Total	1.5	0.2	0.4	0.5
Elementary	1.8	-0.1	0.1	0.3
Secondary	0.7	0.6	0.7	0.8
Public	1.6	0.2	0.4	0.5
Private	1.0	0.1	0.3	0.5

Average annual rate of change (in percent)

(Middle alternative projections)

	1984–91	1991–97	Projected	
			1997–2003	2003–2009
Total	1.5	1.4	0.6	0.1
Elementary	2.5	1.0	0.3	-0.1
Secondary	0.1	2.1	1.0	0.4
Public	1.7	1.4	0.6	0.1
Private	0.6	1.5	0.5	0.0

Elementary and Secondary School Teachers

The number of classroom teachers in elementary and secondary schools increased from 2.51 million in 1984 to about 3.04 million in 1997, an increase of 21 percent (table 32 and figure 43). Under the middle alternative, the number of classroom teachers is projected to increase to 3.17 million by the year 2009, increasing at an average annual growth rate of 0.4 percent, for a 4-percent increase over the projection period. The growth rate will be higher in the first half of the projection period (1997–2003) than in the second half (2003–2009), 0.6 percent per year versus 0.1 percent (figure 44). Under the low alternative, the number of classroom teachers is projected to increase to 3.10 million by the year 2009, increasing at an average annual growth rate of 0.2 percent. Under the high alternative, classroom teachers are projected to increase to 3.24 million by the year 2009, increasing at an average annual growth rate of 0.5 percent.

Classroom Teachers, by Organizational Level

The number of elementary teachers increased from 1.45 million in 1984 to 1.83 million in 1997, an increase of 26 percent from 1984 (figure 45). Under the middle alternative, the number of elementary teachers is projected to increase to 1.86 million by 2009, an increase of 1 percent from 1997; this increase represents an average annual growth rate of 0.1 percent per year. During the projection period, the growth rate in the 1997–2003 period will be 0.3 percent, while the rate of decline in the 2003–2009 period will be 0.1 percent (figure 46). Under the low alternative, the number of elementary teachers is projected to increase to 1.82 million by the year 2009, decreasing at an average annual rate of 0.1 percent. Under the high alternative, elementary teachers are projected to increase to 1.90 million by the year 2009, increasing at an average annual growth rate of 0.3 percent.

The number of secondary classroom teachers increased from 1.06 million in 1984 to about 1.20 million in 1997, an increase of 14 percent from 1984. Under the middle alternative, the number of secondary teachers is projected to increase from 1.20 million in 1997 to 1.31 million by the year 2009, resulting in an increase of 9 percent. This increase will represent an average annual growth rate of 0.7 percent over the projection period. During

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the projection period, the growth rate in the 1997–2003 period will be 1.0 percent, while the growth rate in the 2003–2009 period will be 0.4 percent. Under the low alternative, the number of secondary teachers is projected to increase to 1.29 million by the year 2009, increasing at an average annual growth rate of 0.6 percent. Under the high alternative, secondary teachers are projected to increase to 1.34 million by the year 2009, increasing at an average annual growth rate of 0.8 percent.

Classroom Teachers, by Control of School

The number of classroom teachers in public elementary and secondary schools increased from 2.17 million in 1984 to about 2.65 million in 1997, an increase of 22 percent from 1984 (figure 47). Under the middle alternative, the number of public school teachers is projected to increase to 2.77 million by the year 2009, resulting in an increase of 4 percent from 1997. This increase will represent an average annual growth rate of 0.4 percent. During the projection period, the growth rate in the 1997–2003 period will be 0.6 percent, while the growth rate in the 2003–2009 period will be 0.1 percent (figure 48). Under the low alternative, the number of public school teachers is projected to increase to 2.71 million by the year 2009, increasing at an average annual growth rate of 0.2 percent. Under the high alternative, public school teachers are projected to increase to 2.83 million by the year 2009, increasing at an average annual growth rate of 0.5 percent. Projections of public classroom teachers that have been produced over the last 15 years are nearly as accurate as projections of public high school graduates, but less accurate than projections of public elementary and secondary teachers that NCES has published over the same time period. For more information, see appendix A4, page 152.

The number of classroom teachers in private elementary and secondary schools was an estimated 388,000 in 1997. Under the middle alternative, this number is projected to increase to 401,000 by the year 2009, an increase of 3 percent from 1997. This increase will represent an average annual growth rate of 0.3 percent. During the projection period, the growth rate in the 1997–2003 period will be 0.5 percent, while the growth rate in the 2003–2009 period will be 0.0 percent. Under the low alternative, the number of private school teachers is projected to increase to 393,000 by the year 2009, increasing at an average annual growth rate of 0.1 percent. Under the high alternative, private school teachers are projected to increase to 410,000 by the year 2009, increasing at an average annual growth rate of 0.5 percent.

Pupil/Teacher Ratios

A broad relationship between the number of pupils and teachers can be described by the pupil/teacher ratio. The pupil/teacher ratios were computed based on elementary and secondary enrollment by organizational level and the number of classroom teachers by organizational level.

The pupil/teacher ratio in elementary schools decreased from 19.3 in 1984 to 18.4 in 1992. Then, it increased to 18.9 in 1997 (table 33 and figure 49). Under the middle alternative, this ratio is projected to decline to 18.8 by the year 2009. Under the low and high alternatives, the pupil/teacher ratio in elementary schools is expected to range between 18.3 and 19.2 by the year 2009.

For public elementary schools, under the middle alternative, the pupil/teacher ratio is projected to decrease from 19.4 in 1997 to 19.2 by the year 2009 (figure 50). Under the low and high alternatives, the pupil/teacher ratio in public elementary schools is projected to range between 18.7 and 19.6 by the year 2009. For private elementary schools, under the middle alternative, the pupil/teacher ratio is projected to decrease from 16.6 in 1997 to 16.5 by the year 2009. Under the low and high alternatives, the pupil/teacher ratio in private elementary schools is expected to range between 16.1 and 16.8 by the year 2009.

For secondary schools, the pupil/teacher ratio decreased from 16.0 in 1984 to 14.3 in 1990. Next, it increased to about 14.8 in 1992. Then, it declined to 14.5 in 1997. Under the middle alternative, this ratio is projected to increase to 14.7 by 2009. Under the low and high alternatives, the pupil/teacher ratio in secondary schools is projected to range between 14.4 and 15.0 by the year 2009.

For public secondary schools, under the middle alternative, the pupil/teacher ratio is projected to increase from 14.8 in 1997 to 15.0 by 2009. Under the low and high alternatives, the pupil/teacher ratio in public secondary schools is expected to range between 14.7 and 15.3 by the year 2009. For private secondary schools, under the middle alternative, the pupil/teacher ratio is projected to increase from 11.6 in 1997 to 11.9 by the year 2009. Under the low and high alternatives, the pupil/teacher ratio in private secondary schools is projected to range between 11.7 and 12.1 by the year 2009.

Although private school classroom teachers represented 13 percent of total classroom teachers in 1997, private school enrollment was 11 percent of total enrollment. This indicates that private schools have more teachers for a given number of students than do public schools; that is, private school pupil/teacher ratios are smaller than public school pupil/teacher ratios.

Figure 43
Elementary and secondary classroom teachers, with alternative projections: Fall 1984 to fall 2009

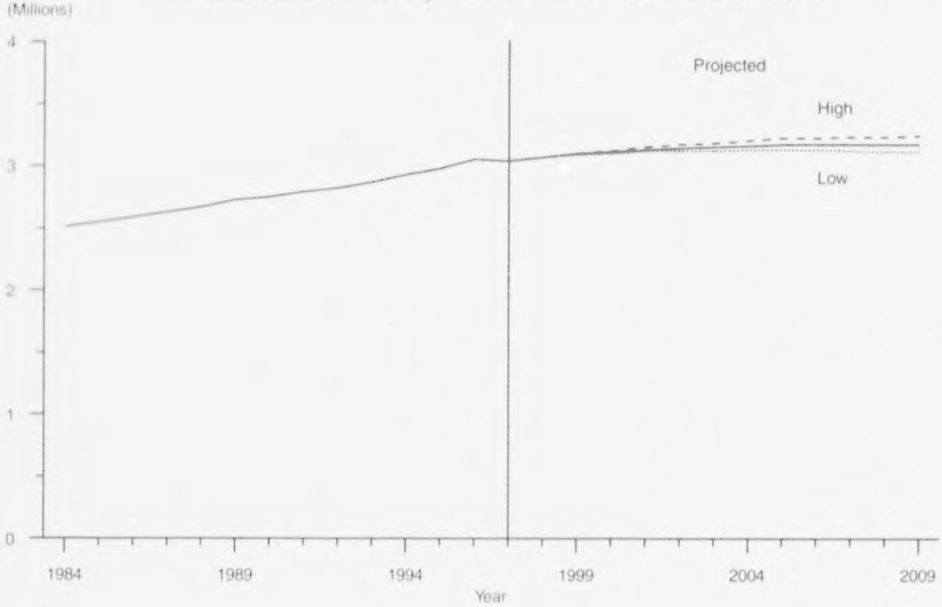

Figure 44
Average annual growth rates for classroom teachers: Fall 1984 to fall 2009

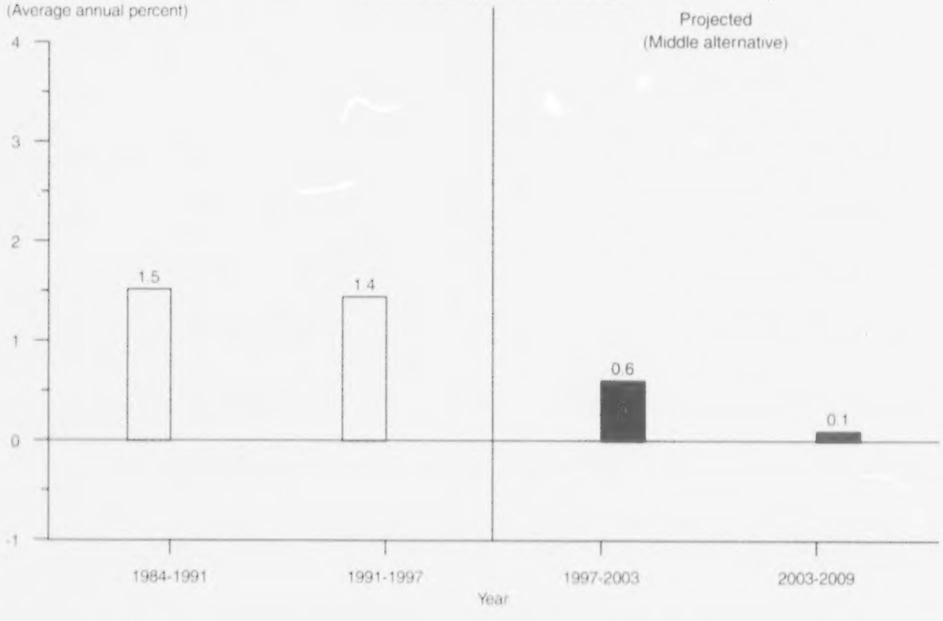

Figure 45

Elementary and secondary classroom teachers, by organizational level, with middle alternative projections: Fall 1984 to fall 2009

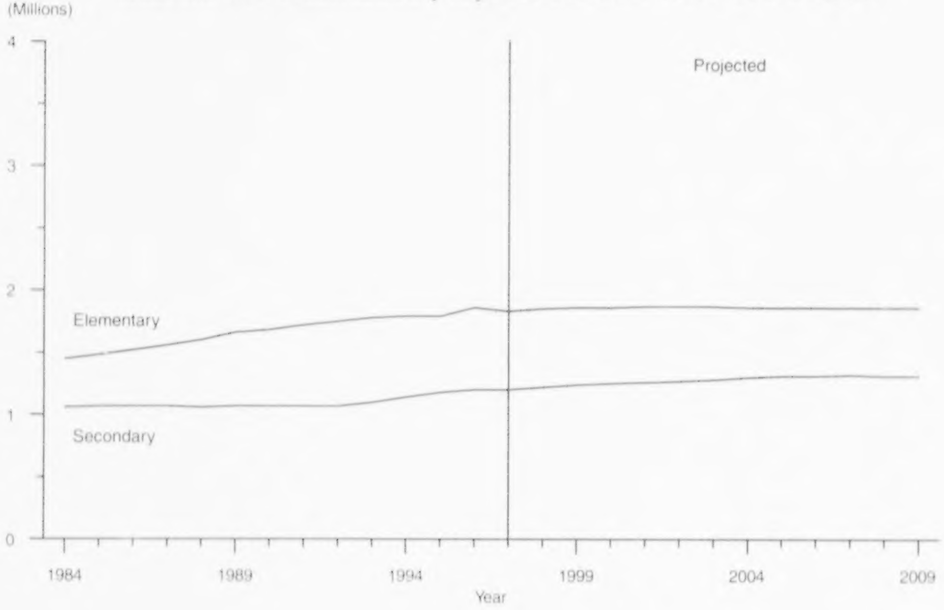

Figure 46

Average annual rates of change for classroom teachers, by organizational level: Fall 1984 to fall 2009

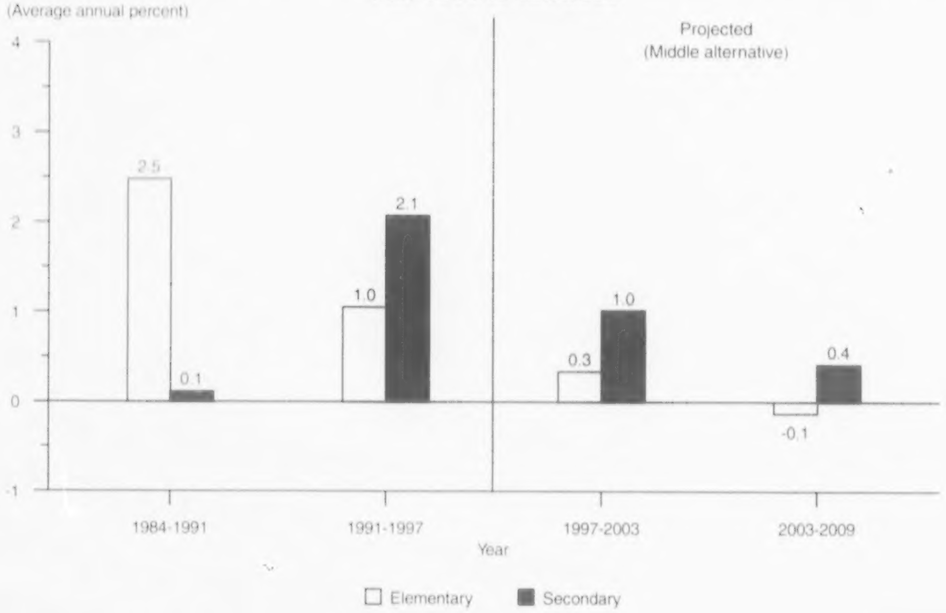

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Figure 47
Elementary and secondary classroom teachers, by control of institution, with middle alternative projections: Fall 1984 to fall 2009

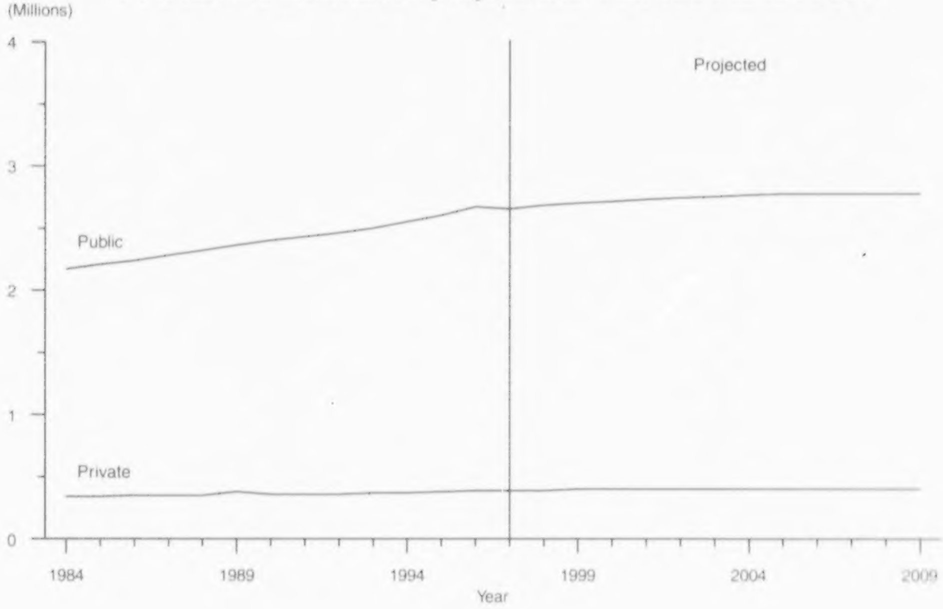

Figure 48
Average annual growth rates for classroom teachers, by control of institution: Fall 1984 to fall 2009

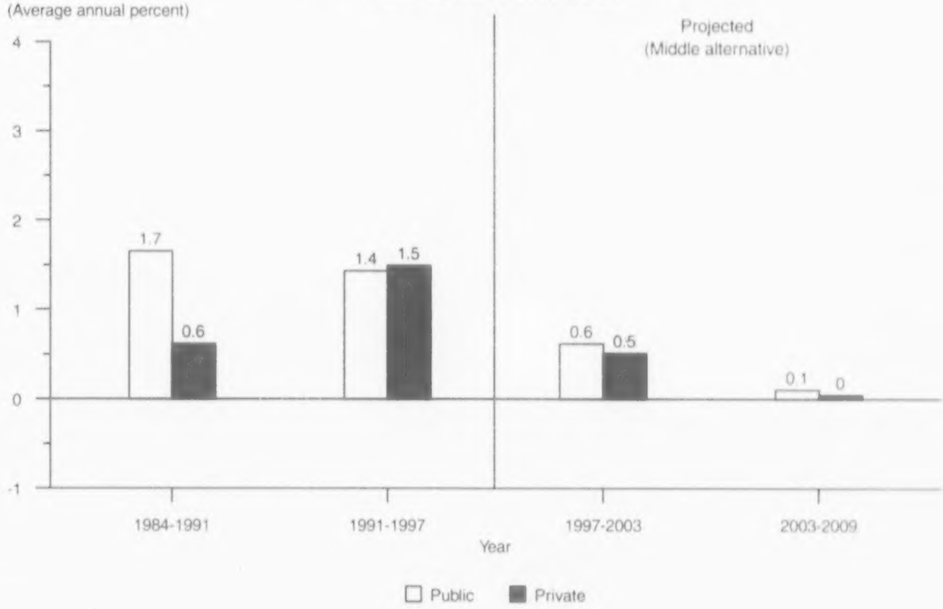

Figure 49
Pupil/teacher ratios, by organizational level, with middle alternative projections: Fall 1984 to fall 2009

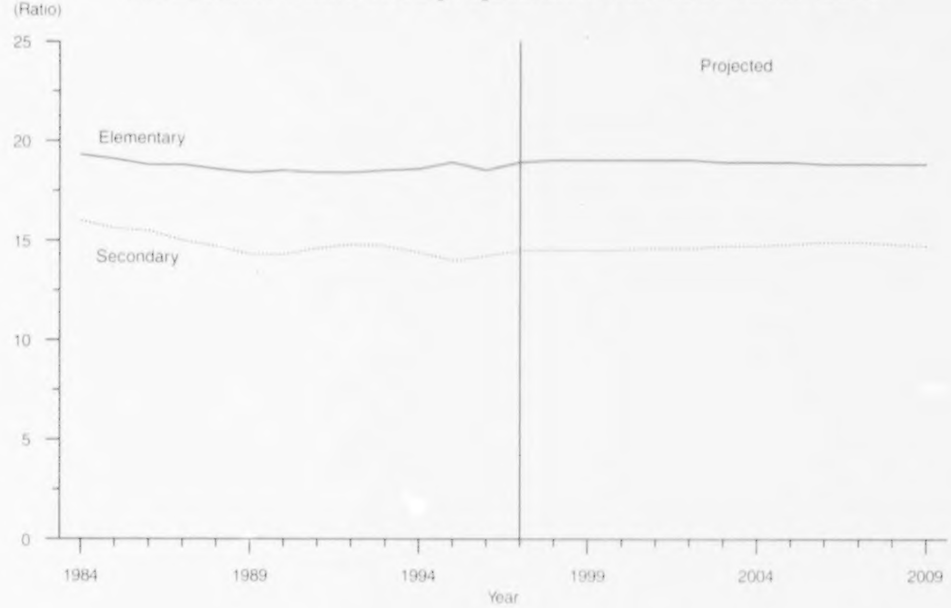

Figure 50
Pupil/teacher ratios, by organizational level and control, with middle alternative projections: Fall 1984 to fall 2009

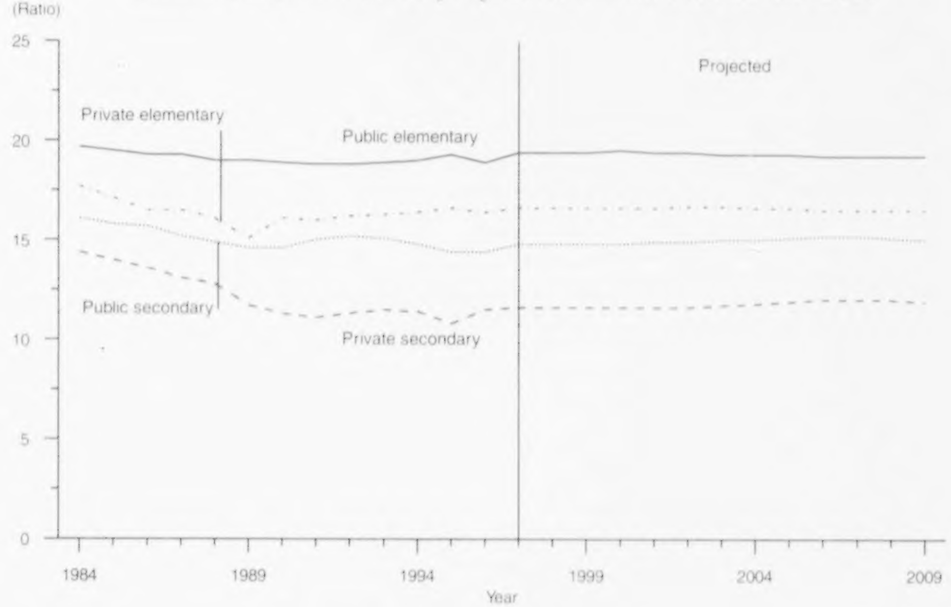

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Table 32.—Classroom teachers in elementary and secondary schools, by control of institution and organizational level, with alternative projections: Fall 1984 to fall 2009

(In thousands)

Year	Total			Public			Private		
	K-12	Elementary	Secondary	K-12	Elementary	Secondary	K-12	Elementary	Secondary
1984	2,508	1,451	1,057	2,168	1,208	960	[1]340	[1]243	[1]97
1985	2,549	1,483	1,066	2,206	1,237	969	343	246	97
1986	2,592	1,521	1,071	2,244	1,271	973	[1]348	250	[1]98
1987	2,631	1,563	1,068	2,279	1,306	973	[1]352	[1]257	[1]95
1988	2,668	1,604	1,064	2,323	1,353	970	[2]345	[2]251	[2]94
1989	2,734	1,662	1,072	2,357	1,387	970	[1]377	[1]275	[1]102
1990	2,753	1,683	1,070	2,398	1,429	969	[2]355	[2]254	[2]101
1991	2,787	1,722	1,065	2,432	1,468	964	[2]355	[2]254	[2]101
1992	2,822	1,752	1,070	2,459	1,492	967	[2]363	[2]260	[2]103
1993	2,870	1,775	1,095	2,504	1,513	991	[1]366	[1]262	[1]104
1994	2,926	1,791	1,135	2,552	1,525	1,027	[1]374	[1]266	[1]108
1995	2,978	1,794	1,184	2,598	1,525	1,073	[1]380	[1]269	[1]111
1996	3,053	1,855	1,198	2,666	1,581	1,085	387	274	113
1997[2]	3,037	1,833	1,204	2,649	1,558	1,091	388	275	113
				Middle alternative projections					
1998	3,068	1,847	1,221	2,677	1,570	1,106	391	277	114
1999	3,095	1,859	1,236	2,700	1,580	1,120	395	279	116
2000	3,108	1,862	1,246	2,712	1,583	1,129	396	279	117
2001	3,129	1,872	1,257	2,731	1,592	1,139	399	281	118
2002	3,142	1,871	1,271	2,743	1,591	1,152	400	281	119
2003	3,149	1,870	1,279	2,749	1,589	1,159	400	280	120
2004	3,162	1,864	1,298	2,761	1,585	1,176	401	280	122
2005	3,167	1,860	1,307	2,765	1,581	1,184	401	279	123
2006	3,172	1,858	1,314	2,771	1,579	1,191	402	279	123
2007	3,171	1,857	1,315	2,770	1,578	1,192	402	278	123
2008	3,170	1,856	1,313	2,768	1,578	1,190	401	278	123
2009	3,168	1,856	1,311	2,766	1,578	1,188	401	278	123
				Low alternative projections					
1998	3,067	1,846	1,221	2,675	1,569	1,106	391	277	114
1999	3,092	1,856	1,236	2,697	1,577	1,120	394	278	116
2000	3,101	1,855	1,246	2,706	1,577	1,129	395	278	117
2001	3,115	1,859	1,255	2,718	1,581	1,138	397	279	118
2002	3,122	1,854	1,268	2,725	1,576	1,149	397	278	119
2003	3,122	1,849	1,273	2,725	1,572	1,154	397	277	119
2004	3,128	1,842	1,285	2,731	1,566	1,165	397	276	121
2005	3,128	1,837	1,291	2,731	1,562	1,170	396	275	121
2006	3,126	1,832	1,295	2,730	1,557	1,173	396	275	121
2007	3,120	1,826	1,294	2,725	1,552	1,173	395	274	121
2008	3,114	1,822	1,292	2,720	1,549	1,171	394	273	121
2009	3,105	1,819	1,286	2,712	1,546	1,166	393	273	121
				High alternative projections					
1998	3,071	1,850	1,221	2,679	1,573	1,106	392	277	114
1999	3,099	1,863	1,236	2,704	1,584	1,120	395	279	116
2000	3,116	1,870	1,246	2,719	1,590	1,129	397	280	117
2001	3,150	1,890	1,259	2,748	1,607	1,141	401	283	118
2002	3,172	1,896	1,275	2,768	1,612	1,156	404	284	120
2003	3,181	1,894	1,287	2,777	1,610	1,166	405	284	121
2004	3,202	1,887	1,315	2,795	1,604	1,191	406	283	123
2005	3,215	1,884	1,331	2,808	1,602	1,206	407	283	125
2006	3,224	1,886	1,338	2,816	1,603	1,213	408	283	125
2007	3,226	1,889	1,337	2,817	1,606	1,211	409	283	125
2008	3,231	1,894	1,337	2,821	1,610	1,211	409	284	125
2009	3,237	1,899	1,338	2,827	1,614	1,213	410	285	125

[1] Estimated on the basis of past data.

[2] Estimate is from the survey on *Early Estimates*.

[3] Projected.

NOTE: The numbers of elementary and secondary teachers reported separately by the National Education Association were prorated to the NCES totals for each year. Historical numbers may differ from those in previous editions. Projections are based on data through 1995. Data for 1996 are actual numbers. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; and Elementary and Secondary Teachers Model. (This table was prepared August 1998.)

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Table 33.—Pupil/teacher ratios in elementary and secondary schools, by control of institution and organizational level, with alternative projections: Fall 1984 to fall 2009

Year	Total		Public		Private	
	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary
1984	19.3	16.0	19.7	16.1	[1]17.7	[1]14.4
1985	19.1	15.6	19.5	15.8	17.1	14.0
1986	18.8	15.5	19.3	15.7	[1]16.5	[1]13.6
1987	18.8	15.0	19.3	15.2	[2]16.5	[2]13.1
1988	18.6	14.7	19.0	14.9	[2]16.1	[2]12.8
1989	18.4	14.3	19.0	14.6	[2]15.1	[2]11.7
1990	18.5	14.3	18.9	14.6	[2]16.1	[2]11.3
1991	18.4	14.6	18.8	15.0	[2]16.0	[2]11.1
1992	18.4	14.8	18.8	15.2	[2]16.2	[2]11.3
1993	18.5	14.7	18.9	15.1	[3]16.3	[3]11.5
1994	18.6	14.4	19.0	14.8	[3]16.4	[3]11.4
1995	18.9	14.0	19.3	14.4	[3]16.6	[3]10.8
1996	18.5	14.2	18.9	14.4	16.4	11.5
1997[3]	18.9	14.5	19.4	14.8	16.6	11.6
Middle alternative projections						
1998	19.0	14.5	19.4	14.8	16.6	11.6
1999	19.0	14.5	19.4	14.8	16.6	11.6
2000	19.0	14.5	19.5	14.8	16.6	11.6
2001	19.0	14.6	19.4	14.9	16.6	11.6
2002	19.0	14.6	19.4	14.9	16.7	11.6
2003	18.9	14.7	19.3	15.0	16.7	11.7
2004	18.9	14.7	19.3	15.0	16.6	11.8
2005	18.9	14.8	19.3	15.1	16.6	11.9
2006	18.8	14.9	19.2	15.2	16.5	12.0
2007	18.8	14.9	19.2	15.2	16.5	12.0
2008	18.8	14.8	19.2	15.1	16.5	12.0
2009	18.8	14.7	19.2	15.0	16.5	11.9
Low alternative projections (Based on high alternative projections of teachers)						
1998	19.0	14.5	19.4	14.8	16.6	11.6
1999	18.9	14.5	19.4	14.8	16.5	11.6
2000	19.0	14.5	19.4	14.8	16.6	11.6
2001	18.8	14.5	19.2	14.8	16.5	11.6
2002	18.7	14.5	19.1	14.8	16.4	11.6
2003	18.7	14.6	19.1	14.9	16.4	11.7
2004	18.7	14.5	19.1	14.8	16.4	11.6
2005	18.6	14.6	19.0	14.9	16.4	11.7
2006	18.5	14.6	18.9	14.9	16.3	11.8
2007	18.4	14.7	18.8	14.9	16.2	11.8
2008	18.4	14.6	18.8	14.9	16.1	11.8
2009	18.3	14.4	18.7	14.7	16.1	11.7
High alternative projections (Based on low alternative projections of teachers)						
1998	19.0	14.5	19.4	14.8	16.6	11.6
1999	19.0	14.5	19.4	14.8	16.6	11.6
2000	19.1	14.5	19.5	14.8	16.7	11.6
2001	19.1	14.6	19.5	14.9	16.7	11.6
2002	19.2	14.6	19.6	14.9	16.8	11.7
2003	19.2	14.8	19.6	15.1	16.8	11.8
2004	19.1	14.9	19.5	15.2	16.8	11.9
2005	19.1	15.0	19.5	15.3	16.8	12.1
2006	19.1	15.1	19.5	15.4	16.8	12.2
2007	19.1	15.1	19.5	15.4	16.8	12.2
2008	19.1	15.1	19.5	15.4	16.8	12.2
2009	19.2	15.0	19.6	15.3	16.8	12.1

[1] Estimated on the basis of past data.

[2] Estimate is from the survey on *Early Estimates*.

[3] Projected.

NOTE: The pupil-teacher ratios were derived from tables 2 and 32. Historical numbers may differ from those in previous editions. Projections are based on data through 1995. Data for 1996 are actual numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; National Elementary and Secondary Enrollment Model; and Elementary and Secondary Teachers Model. (This table was prepared August 1998.)

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Chapter 6

Expenditures of Public Elementary and Secondary Schools

Current expenditures are projected to increase by 25 percent in constant dollars between school years 1995–96 and 2008–09 in the middle set of projections presented in this chapter. Average annual teacher salaries in public elementary and secondary schools in constant dollars are projected to increase 1 percent during that period. (Note that all percent changes presented in this chapter were calculated using unrounded numbers.) These projections are based on assumptions concerning economic growth and assistance by state governments to local governments which are discussed in appendix A5. Other sets of projections, based on alternative economic scenarios, are also discussed. No projections for private schools are presented as there are no regular data collections for private school expenditures.

There are many factors that may affect future school expenditures and teacher salaries that were not considered in the production of the projections presented in this chapter. These include: 1) recent policy initiatives to decrease classroom size; and 2) potential changes in the distribution of elementary and secondary teachers as older teachers retire and are replaced by younger teachers. Projections of current expenditures that have been produced over the last eleven years are generally less accurate than the recent NCES projections of public elementary and secondary enrollment, public high school graduates, and classroom teachers, more accurate than the recent NCES projections of higher education enrollment, earned degrees, and teacher salaries, and of similar accuracy to recent NCES projections of expenditures of institutions of higher education. Projections of teacher salaries that have been produced over the last eleven years are generally less accurate than the recent NCES projections of public elementary and secondary enrollment, public high school graduates, classroom teachers, current expenditures in elementary and secondary schools, and expenditures of institutions of higher education, and of similar accuracy to recent NCES projections of higher education enrollment and earned degrees.

Current Expenditures

Past Trends

Current expenditures increased from $180.2 billion in 1983–84 to $262.3 billion in 1995–96 using constant 1996–97 dollars and the Consumer Price Index (table 34 and figure 51). (The 1995–96 school year is the last year for which current expenditures are available.) This was an increase of 46 percent. Current expenditures are estimated to increase to $276.8 billion by 1997–98, an increase of 54 percent since 1983–84. From 1983–84 to 1995–96, current expenditures per pupil in average daily attendance rose 28 percent to $6,320 (table 34 and figures 52 and 53). Current expenditures per pupil in average daily attendance increased an estimated 30 percent from 1983–84 to 1997–98. Current expenditures per pupil in fall enrollment (table 35) increased 27 percent from 1983–84 to 1995–96.

Historically, education expenditures have followed a path similar to general economic trends. For much of the period since 1983–84, the economy has been rising. Current expenditures have also been rising during that period. (See figure 54 for a comparison of the growth rates of current expenditures per pupil and one major indicator of the state of the economy, disposable income per capita, and table B6 for the values of disposable income per capita.)

The amount that local governments spend on education is also historically associated with the amount of state education aid to local governments (table B7). There was a rapid rise in state education aid to local governments during the period from 1983–84 to 1995–96. (See figure 55 for a comparison of the growth rates of current expenditures per pupil and revenue receipts from state sources per capita.)

Current expenditures, which had already been increasing, have increased each year since 1983–84. The percent increase has not been constant over that time, however. Most of the largest of the percent increases occurred from 1984–85 to 1989–90. That was the period when disposable income per capita and state education aid per capita were also increasing most rapidly. Also during that period, enrollments, which had been falling since the early 1970s, entered a period of steady increases. Since 1989–90, current expenditures have not been increasing as rapidly. Disposable income per capita and state education aid per capita have been increasing at lower rates than in the mid-1980s as well.

The percentage of total disposable income spent on public elementary and secondary school current expenditures has increased slightly from 1983–84 (4.4 percent) to 1995–96 (4.8 percent) (tables 34, B5 and B6). The year 1983–84 is notable because enrollment as measured by average daily attendance reached its lowest level since 1962–63 and has been increasing annually since then.

Current expenditures per pupil in average daily attendance as a percentage of disposable income per capita rose from 28.2 percent in 1983–84 to 30.2 percent in 1995–96.

Alternative Projections

Three sets of projections are presented for current expenditures in this chapter. Each set of projections is based on alternative assumptions concerning the economy. These assumptions together with the methodology used to produce the current expenditure projections are discussed in appendix A5.

The projections in this chapter are presented in both constant 1996–97 dollars and in current dollars. The projections were developed in constant dollars and then placed in current dollars using projections for the Consumer Price Index (CPI) (table B8). Three alternative sets of projections for the CPI were used, one for use with the middle alternative projections, one for use with the low alternative projections, and one for use with the high alternative projections. As the set of projections for the CPI developed for use with the low economic growth projections is rising at the most rapid rate and that developed for use with the high economic growth projections is rising at the slowest rate, it is frequently the case that the expenditure projections in current dollars from the low economic growth set of projections are higher than those from the other two alternative sets of projections.

In the middle alternative projections, current expenditures in constant 1996–97 dollars are projected to increase steadily throughout the forecast period, reaching $326.8 billion in 2008–09. This is an increase of 25 percent over the 1995–96 level, and 18 percent over the estimated level for 1997–98. Current expenditures are projected to increase most rapidly during the first half of the period. This is also the period during which enrollments are expected to increase most rapidly.

Current expenditures per pupil in average daily attendance are projected to increase by 16 percent to $7,306 from 1995–96 to 2008–09 (table 34 and figure 52).

In the middle economic growth projection, total current expenditures as a percentage of total disposable income are projected to decrease to 4.4 percent from 1995–96 to 2008–09. Current expenditures per pupil in average daily attendance as a percentage of disposable income per capita are projected to decrease slightly, from 30.2 percent to 28.8 percent during the same period.

In the low economic growth projections, both current expenditures and current expenditures per pupil are projected to increase more slowly than in the middle set of projections. Current expenditures are projected to increase by 17 percent from 1995–96 to 2008–09, reaching $307.9 billion at the end of the forecast period. Current expenditures per pupil in average daily attendance are projected to reach $6,885 by 2008–09, an increase of 9 percent since 1995–96.

In the high economic growth projections, current expenditures are projected to increase by approximately 32 percent over the 1995–96 level to $346.4 billion in 2008–09. Current expenditures per pupil in average daily attendance are projected to increase by 23 percent to $7,746 since 1995–96.

Teacher Salaries

Past Trends

The period from 1983–84 to 1997–98 has been dominated by two different patterns for teacher salaries in constant dollars (table 36 and figures 56 and 57).

Teacher salaries had reached the bottom of a period of steady declines in 1980–81, and then entered a period of steady and relatively rapid growth. From 1983–84 to 1989–90, teacher salaries increased 14.6 percent, from $34,259 to $39,262. During this period, current expenditures and the revenues of state governments were increasing rapidly. (See figure 59 for a comparison of the growth rates for teacher salaries and current expenditures per pupil.) It was during that period when enrollment, which had also been in a period of steady decline, began increasing again.

From 1989–90 to 1997–98, teacher salaries declined 1.5 percent. During much of that period, the economy, current expenditures, and revenues of state and local governments had not been increasing as rapidly as earlier.

Alternative Projections

As with current expenditures, three sets of projections are presented for teacher salaries. The methodology and the assumptions used to produce these projections are discussed in appendix A5.

In the middle economic growth projections, the average teacher salary in constant 1996–97 dollars is projected to reach $39,037 in 2008–09 (table 36 and figure 56). This is a 1-percent increase from the level estimated for 1997–98.

In the low alternative projections, teacher salaries are projected to fall slightly throughout the projection period. The average salary is projected to fall to $38,003 in 2008–09, a decrease of about 2 percent from 1997–98. (See figure 57 for a comparison of the growth rates for the alternative sets of projections.)

In the high alternative projections, the average teacher salary is projected to reach $40,083 in 2008–09, an increase of about 4 percent from 1997–98.

Figure 51

Current expenditures of public schools (in constant 1996-97 dollars), with alternative projections: 1983-84 to 2008-09

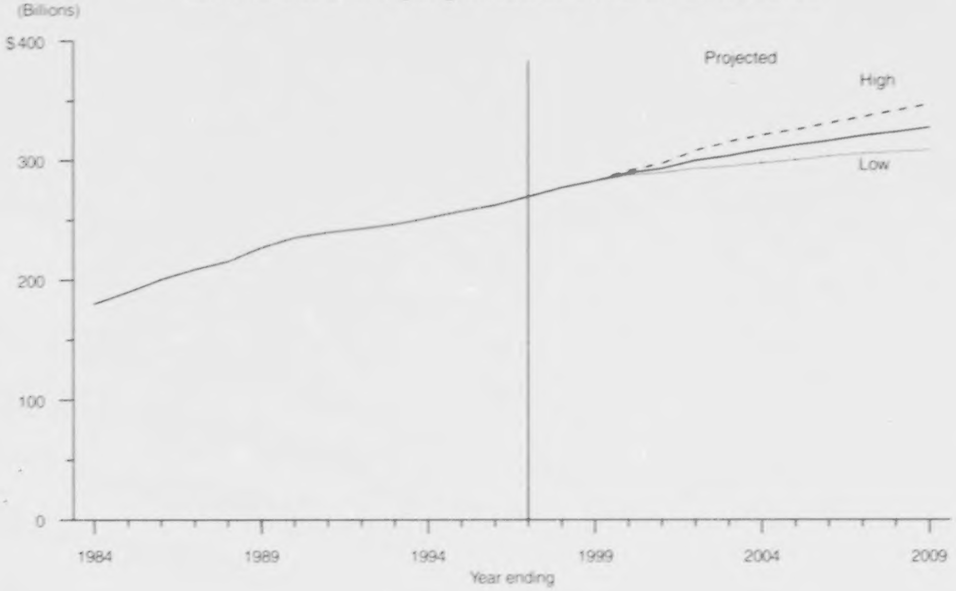

Figure 52

Current expenditures per pupil in average daily attendance in public schools (in constant 1996-97 dollars), with alternative projections: 1983-84 to 2008-09

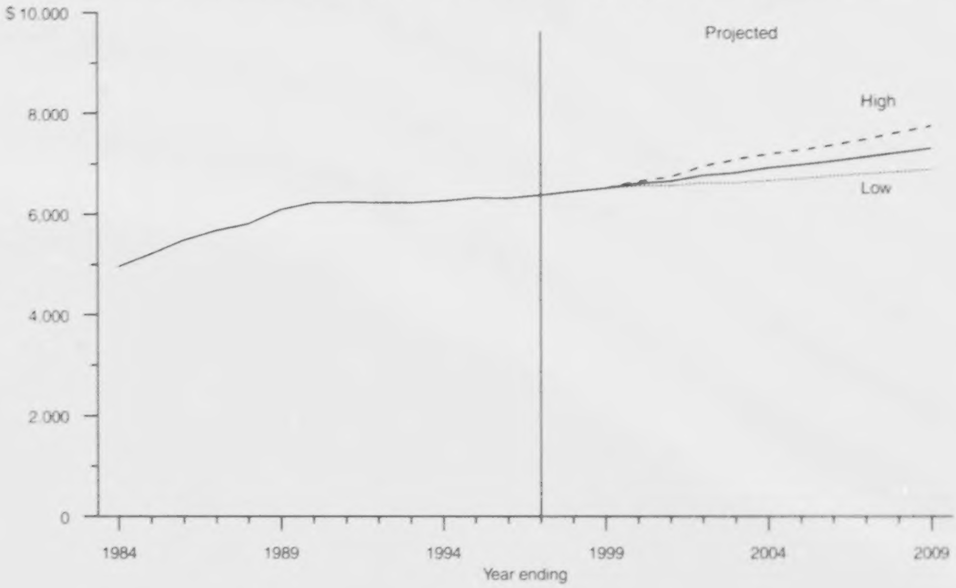

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Figure 53
Annual percentage change in current expenditures per pupil in average daily attendance in public schools (in constant dollars), with alternative projections: 1983-84 to 2008-09

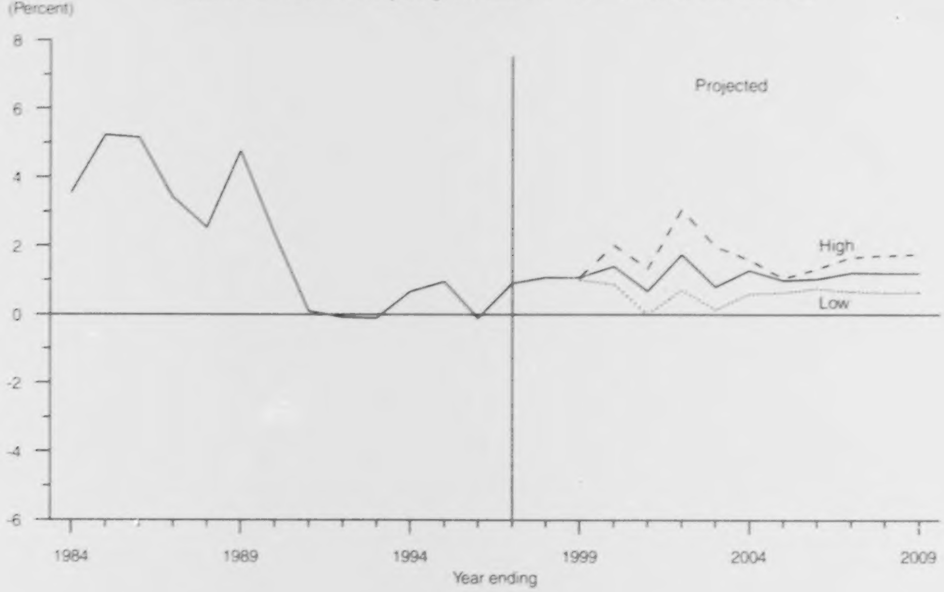


Figure 54
Annual percentage change in current expenditures per pupil in average daily attendance in public schools and disposable income per capita (both in constant dollars), with middle alternative projections: 1983-84 to 2008-09

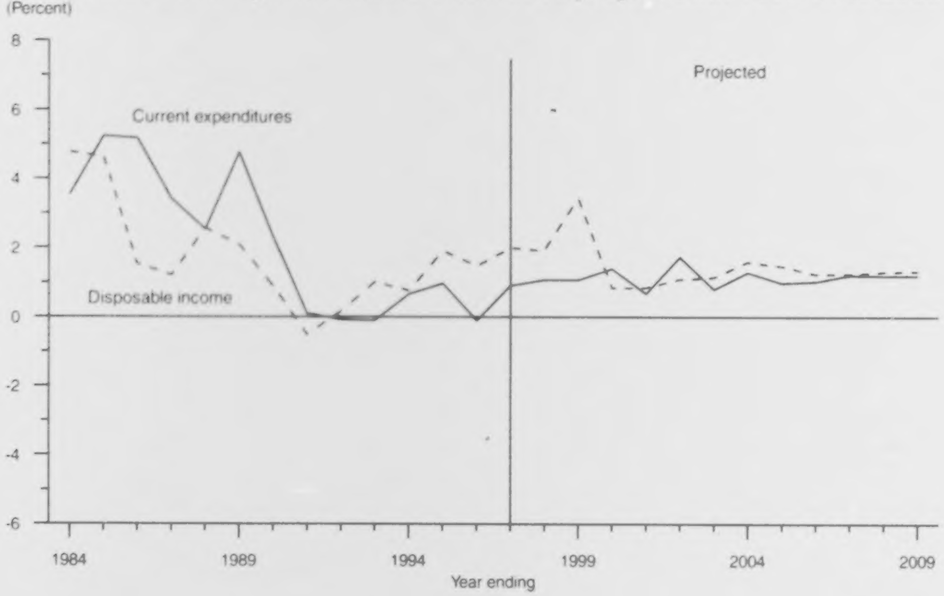


Figure 55

Annual percentage change in current expenditures per pupil in ADA of public schools and education revenue receipts from state sources per capita (both in constant dollars), with middle alternative projections: 1983-84 to 2008-09

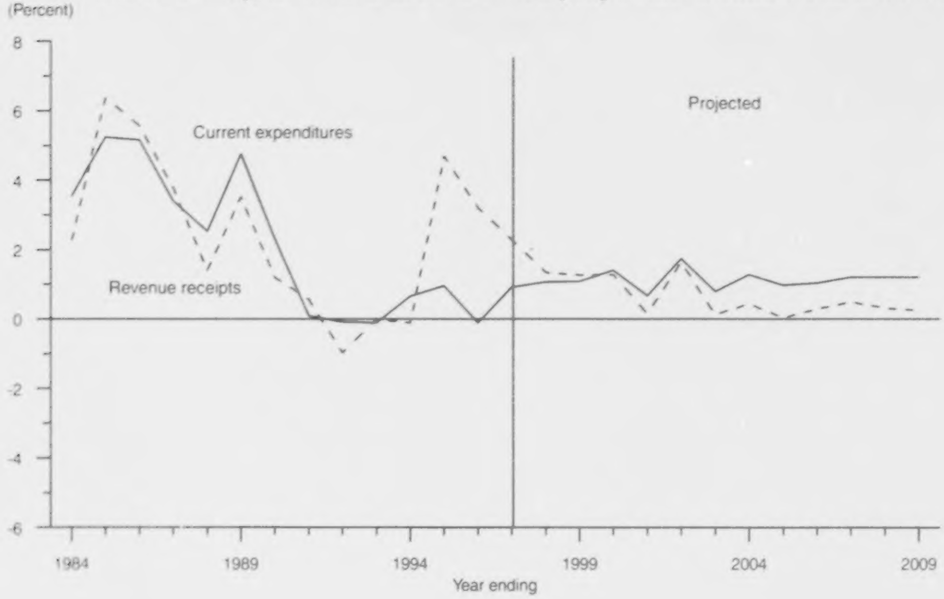


Figure 56

Estimated average annual salaries of teachers in public schools (in constant 1996-97 dollars), with alternative projections: 1983-84 to 2008-09

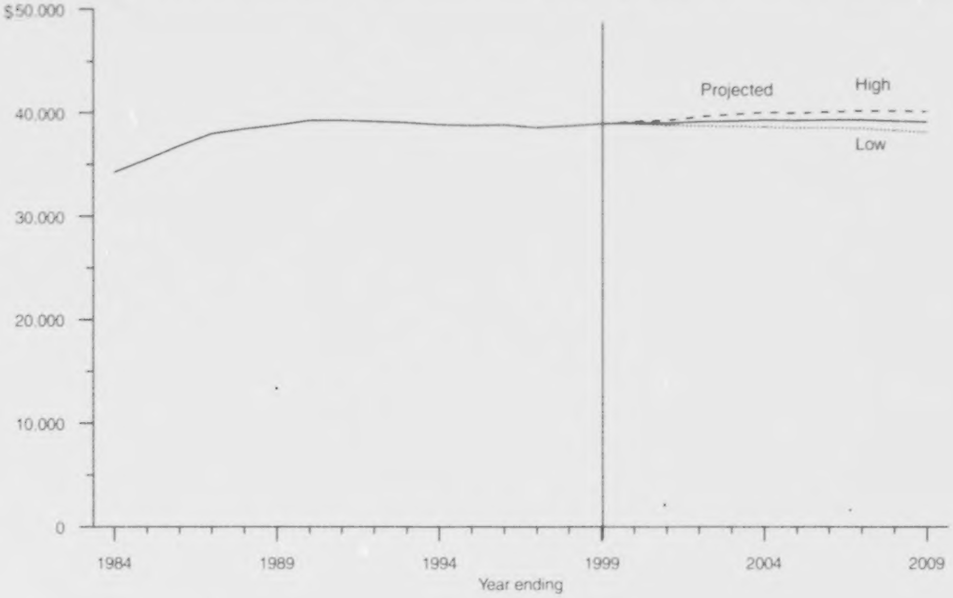


Figure 57

Annual percentage change in estimated average annual salaries of teachers in public schools (in constant dollars), with alternative projections: 1983-84 to 2008-09

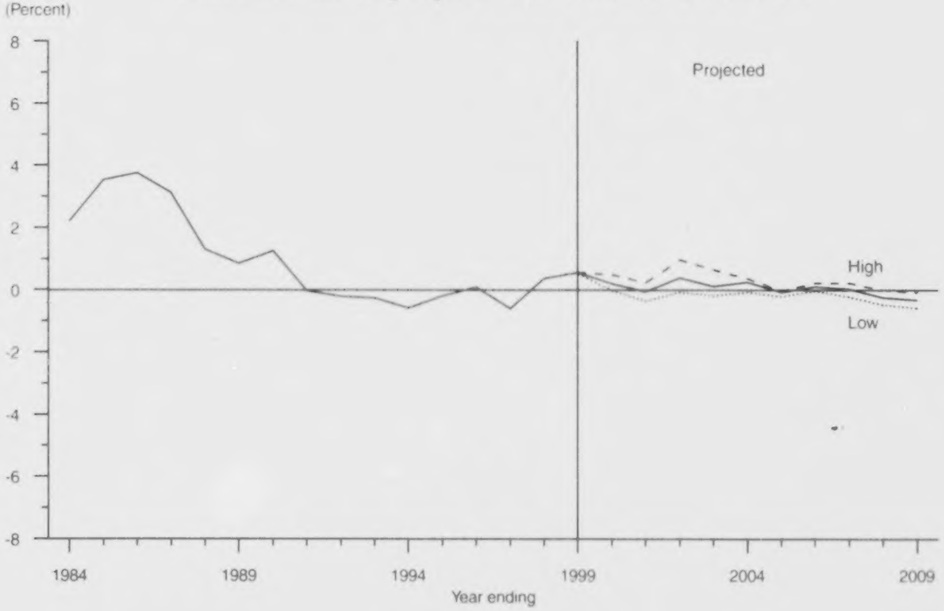


Figure 58
Annual percentage change in estimated average annual salaries of teachers in public schools (in constant dollars) and average daily attendance, with middle alternative projections: 1983-84 to 2008-09

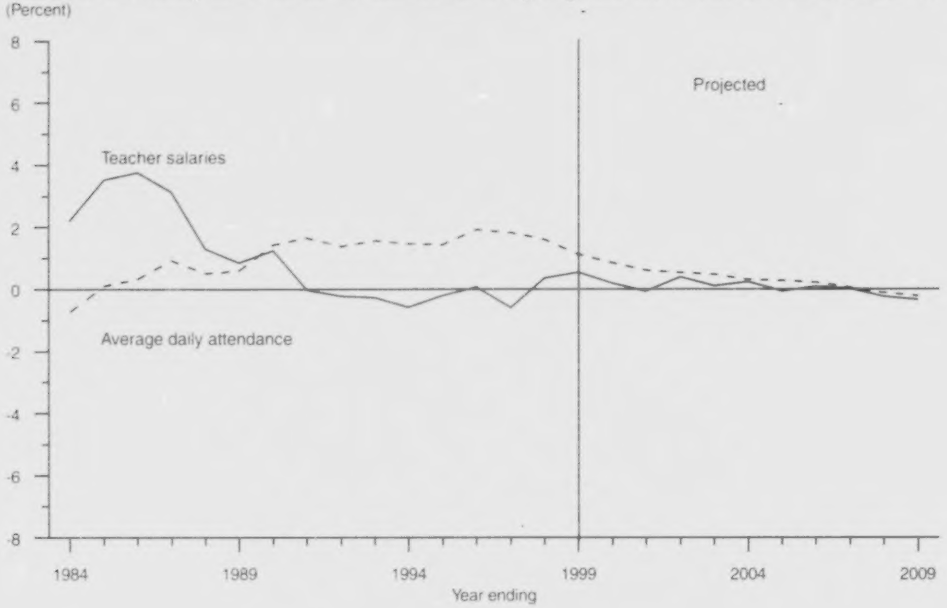
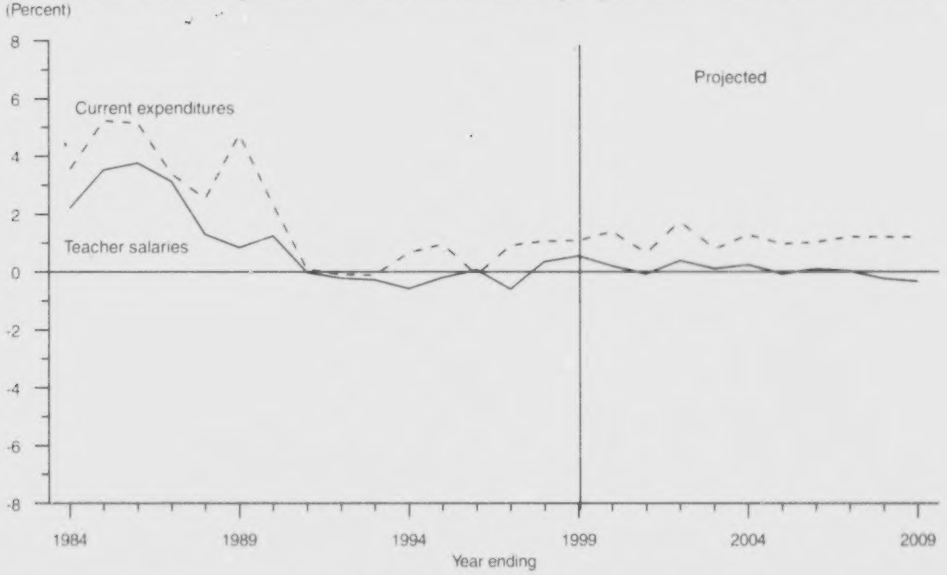


Figure 59
Annual percentage change in estimated average annual salaries of teachers and current expenditures per pupil in ADA of public schools (both in constant dollars), with middle alternative projections: 1983-84 to 2008-09



NOTE: Data for current expenditures for 1996-97 and 1997-98 are estimated.

Table 34.—Current expenditures and current expenditures per pupil in average daily attendance (ADA) in public elementary and secondary schools, with alternative projections: 1983–84 to 2008–09

Year ending	ADA (in thousands)	Current expenditures			
		Constant 1996–97 dollars[1]		Current dollars	
		Total (in billions)	Per pupil in ADA	Total (in billions)	Per pupil in ADA
1984	36,363	$180.2	$4,956	$115.4	$3,173
1985	36,404	189.9	5,216	126.3	3,470
1986	36,523	200.3	5,485	137.2	3,756
1987	36,864	209.1	5,672	146.4	3,970
1988	37,051	215.5	5,815	157.1	4,240
1989	37,268	227.0	6,092	173.1	4,645
1990	37,799	235.6	6,233	188.2	4,980
1991	38,427	239.7	6,239	202.0	5,258
1992	38,961	242.9	6,234	211.2	5,421
1993	39,570	246.4	6,227	220.9	5,584
1994	40,146	251.6	6,267	231.5	5,767
1995	40,721	257.7	6,327	243.9	5,989
1996	41,502	262.3	6,320	255.1	6,146
1997[2]	42,256	269.5	6,378	269.5	6,378
Middle alternative projections					
1998[2]	42,933	276.8	6,446	281.7	6,562
1999	43,417	282.9	6,516	294.0	6,771
2000	43,787	289.3	6,607	308.8	7,053
2001	44,055	293.0	6,651	321.8	7,305
2002	44,289	299.7	6,767	338.4	7,640
2003	44,497	303.5	6,821	352.7	7,927
2004	44,631	308.3	6,909	—	—
2005	44,753	312.2	6,976	—	—
2006	44,851	316.1	7,048	—	—
2007	44,875	320.1	7,134	—	—
2008	44,824	323.6	7,219	—	—
2009	44,724	326.8	7,306	—	—
Low alternative projections					
1998[2]	42,933	276.8	6,446	281.7	6,562
1999	43,417	282.7	6,511	297.1	6,843
2000	43,787	287.6	6,568	315.6	7,209
2001	44,055	289.4	6,568	332.6	7,549
2002	44,289	292.9	6,614	352.4	7,956
2003	44,497	294.7	6,623	371.3	8,344
2004	44,631	297.3	6,662	—	—
2005	44,753	300.0	6,703	—	—
2006	44,851	302.9	6,754	—	—
2007	44,875	305.1	6,798	—	—
2008	44,824	306.6	6,841	—	—
2009	44,724	307.9	6,885	—	—
High alternative projections					
1998[2]	42,933	276.8	6,446	281.7	6,562
1999	43,417	282.9	6,516	291.6	6,717
2000	43,787	291.1	6,648	304.7	6,959
2001	44,055	296.8	6,736	315.8	7,168
2002	44,289	307.4	6,942	332.3	7,504
2003	44,497	315.0	7,079	346.5	7,788
2004	44,631	320.9	7,191	—	—
2005	44,753	325.2	7,266	—	—
2006	44,851	330.2	7,362	—	—
2007	44,875	335.8	7,484	—	—
2008	44,824	341.2	7,612	—	—
2009	44,724	346.4	7,746	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Current expenditures are *Early Estimates*, and average daily attendance is projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTES: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; Common Core of Data survey; Early Estimates survey; Elementary and Secondary Average Daily Attendance Model; Elementary and Secondary School Current Expenditure Model; and National Education Association, annual *Estimates of School Statistics*. (Latest edition 1997–98. Copyright 1998 by the National Education Association. All rights reserved.) (This table was prepared November 1998.)

Table 35.—Current expenditures and current expenditures per pupil in fall enrollment in public elementary and secondary schools, with alternative projections: 1983–84 to 2008–09

Year ending	Fall enrollment [1] (in thousands)	Current expenditures			
		Constant 1996–97 dollars [2]		Current dollars	
		Total (in billions)	Per pupil in fall enrollment	Total (in billions)	Per pupil in fall enrollment
1984	39,252	$180.2	$4,591	$115.4	$2,940
1985	39,208	189.9	4,843	126.3	3,222
1986	39,422	200.3	5,082	137.2	3,479
1987	39,753	209.1	5,260	146.4	3,682
1988	40,008	215.5	5,386	157.1	3,927
1989	40,188	227.0	5,649	173.1	4,307
1990	40,543	235.6	5,811	188.2	4,643
1991	41,217	239.7	5,816	202.0	4,902
1992	42,047	242.9	5,776	211.2	5,023
1993	42,823	246.4	5,754	220.9	5,160
1994	43,465	251.6	5,789	231.5	5,327
1995	44,111	257.7	5,841	243.9	5,529
1996	44,840	262.3	5,850	255.1	5,689
1997[3]	45,592	269.5	5,911	269.5	5,911
Middle alternative projections					
1998[3]	46,323	276.8	5,975	281.7	6,082
1999	46,844	282.9	6,039	294.0	6,275
2000	47,244	289.3	6,123	308.8	6,537
2001	47,533	293.0	6,164	321.8	6,771
2002	47,785	299.7	6,271	338.4	7,081
2003	48,010	303.5	6,322	352.7	7,347
2004	48,154	308.3	6,403	—	—
2005	48,286	312.2	6,466	—	—
2006	48,392	316.1	6,532	—	—
2007	48,418	320.1	6,612	—	—
2008	48,362	323.6	6,691	—	—
2009	48,255	326.8	6,771	—	—
Low alternative projections					
1998[3]	46,323	276.8	5,975	281.7	6,082
1999	46,844	282.7	6,035	297.1	6,342
2000	47,244	287.6	6,088	315.6	6,681
2001	47,533	289.4	6,088	332.6	6,996
2002	47,785	292.9	6,130	352.4	7,374
2003	48,010	294.7	6,138	371.3	7,733
2004	48,154	297.3	6,174	—	—
2005	48,286	300.0	6,213	—	—
2006	48,392	302.9	6,259	—	—
2007	48,418	305.1	6,301	—	—
2008	48,362	306.6	6,341	—	—
2009	48,255	307.9	6,381	—	—
High alternative projections					
1998[3]	46,323	276.8	5,975	281.7	6,082
1999	46,844	282.9	6,039	291.6	6,226
2000	47,244	291.1	6,161	304.7	6,450
2001	47,533	296.8	6,243	315.8	6,643
2002	47,785	307.4	6,434	332.3	6,955
2003	48,010	315.0	6,561	346.5	7,218
2004	48,154	320.9	6,665	—	—
2005	48,286	325.2	6,734	—	—
2006	48,392	330.2	6,823	—	—
2007	48,418	335.8	6,936	—	—
2008	48,362	341.2	7,055	—	—
2009	48,255	346.4	7,179	—	—

[1] Each enrollment number is for the fall of the school year ending in the school year shown in column 1. For example, the enrollment number listed for 1984 is for fall 1983.

[2] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[3] Current expenditures are *Early Estimates*.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; *Statistics of Public Elementary and Secondary Schools*; "Selected Public and Private Elementary and Secondary Education Statistics," NCES Bulletin, October 23, 1979; Common Core of Data survey; Early Estimates survey; National Elementary and Secondary Enrollment Model; Elementary and Secondary School Current Expenditure Model; and National Education Association, annual *Estimates of School Statistics*. (Latest edition 1997–98. Copyright 1998 by the National Education Association. All rights reserved.) (This table was prepared November 1998.)

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Table 36.—Estimated average annual salaries of classroom teachers in public elementary and secondary schools, with alternative projections: 1983–84 to 2008–09

Year ending	Constant 1996–97 dollars [1]	Current dollars
1984	$34,259	$21,935
1985	35,469	23,600
1986	36,802	25,199
1987	37,955	26,569
1988	38,450	28,034
1989	38,776	29,564
1990	39,262	31,367
1991	39,256	33,084
1992	39,168	34,063
1993	39,062	35,029
1994	38,835	35,737
1995	38,757	36,685
1996	38,785	37,716
1997	38,554	38,554
1998	38,691	39,385
	Middle alternative projections	
1999	38,904	40,425
2000	38,982	41,617
2001	38,958	42,788
2002	39,108	44,159
2003	39,152	45,499
2004	39,244	—
2005	39,218	—
2006	39,252	—
2007	39,259	—
2008	39,165	—
2009	39,037	—
	Low alternative projections	
1999	38,891	40,872
2000	38,879	42,669
2001	38,737	44,519
2002	38,707	46,558
2003	38,633	48,675
2004	38,603	—
2005	38,516	—
2006	38,502	—
2007	38,413	—
2008	38,223	—
2009	38,003	—
	High alternative projections	
1999	38,904	40,105
2000	39,091	40,923
2001	39,182	41,694
2002	39,563	42,768
2003	39,815	43,803
2004	39,961	—
2005	39,945	—
2006	40,033	—
2007	40,120	—
2008	40,116	—
2009	40,083	—

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[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Elementary and Secondary Teacher Salary Model; and National Education Association, annual *Estimates of School Statistics*. (Latest edition 1997-98. Copyright 1998 by the National Education Association. All rights reserved.) (This table was prepared November 1998.)

Chapter 7

Expenditures of Institutions of Higher Education

The steady growth in higher education expenditures that has marked the 1980s and early 1990s is expected to continue throughout the 1990s and beyond with total current fund expenditures projected to increase 36 percent from 1995–96 to 2008–09 in constant dollars. (Note that all percent changes presented in this chapter were calculated using unrounded numbers.) Key assumptions behind these projections include: (1) the economy continues to grow at a steady rate; (2) inflation rates remain near current levels; (3) and enrollments increase as in the middle alternative projections presented in chapter 2. Projections based on alternative economic scenarios are discussed below.

The higher education system is examined by both control of institution (public versus private) and by type of institution (4-year versus 2-year). For each of these sectors of higher education, two different types of expenditures—current-fund expenditures and educational and general expenditures—are examined. Educational and general expenditures consist of those current-fund expenditures that are for activities that are directly related to the education of students. Expenditures for such activities as auxiliary enterprises, e.g. student dormitories, cafeterias, and bookstores, and university hospitals are excluded. All expenditure data have been adjusted for inflation. Since the historical trends and the projections of current-fund expenditures and educational and general expenditures are similar, emphasis is given to current-fund expenditures.

There are many factors that may affect future higher education expenditures that were not considered in the production of the projections presented in this chapter. Projections of expenditures of institutions of higher education that have been produced over the last seven years are generally less accurate than the recent NCES projections of public elementary and secondary enrollment, public high school graduates, and classroom teachers, more accurate than the recent NCES projections of higher education enrollment, earned degrees, and teacher salaries, and of similar accuracy to recent NCES projections of current expenditures in elementary and secondary schools.

Past Trends

Following a well-established trend, current-fund expenditures have increased significantly since 1983–84 (table 37 and figure 60). In real terms, current-fund expenditures increased 53 percent from 1983–84 to 1995–96. (1995–96 is the last year for which there are actual data.) The rate of increase in current-fund expenditures during this period has not been consistent with years of rapid growth and others of slow growth. Factors that are associated with current-fund expenditures during these periods include: (1) the economy as a whole, and, for public institutions, the economic situation of state and local governments; (2) the inflation rate; and (3) enrollments.

The greatest increases in current-fund expenditures occurred from 1983–84 to 1986–87, when current-fund expenditures rose 18 percent. The economy was increasing steadily during that period with disposable income per capita rising 8 percent.

The 29 percent increase that occurred from 1986–87 to 1995–96 was partly due to the rapid increase in enrollments that occurred during that time. The number of students as measured by full-time-equivalent enrollment rose 14 percent. From 1983–84 to 1986–87, full-time-equivalent enrollment fell slightly.

While current-fund expenditures in both public and private institutions rose, they did not rise at the same rate. From 1983–84 to 1995–96, current-fund expenditures increased 48 percent in public institutions and 61 percent in private institutions (table 37).

For the period under examination, educational and general expenditures have been an almost constant percentage of current-fund expenditures (increasing from 78 percent in 1983–84 to 79 percent in 1995–96). Hence, the trend for educational and general expenditures is similar to that for current-fund expenditures (table 38 and figure 61). Total educational and general expenditures in constant dollars increased 56 percent from 1983–84 to 1995–96. There was a 48 percent increase in educational and general expenditures in public colleges from 1983–84 to 1995–96 and a 71 percent increase in private colleges.

Since the trends of current-fund expenditures for the different sectors show some differences, the data are examined separately for each sector, except private 2-year institutions. Expenditures are examined both as a total and per student in full-time-equivalent (FTE) enrollment.

The trend for private 2-year projections is not shown separately because there have been significant additions to the universe of private 2-year institutions since 1980–81. Private 2-year institutions comprise the smallest of the higher education sectors. In 1995–96, they accounted for 1 percent of total current-fund expenditures and 2 percent of FTE enrollment.

Public 4-Year Institutions

The trend for current-fund expenditures in public 4-year institutions is very similar to that for all institutions (table 39). From 1983–84 to 1995–96 current-fund expenditures increased 48 percent with the most rapid growth occurring from 1983–84 to 1986–87. Current-fund expenditures rose 18 percent during that time, while full-time-equivalent enrollment increased by 1 percent.

As with total current-fund expenditures, current-fund expenditures per student rose each year from 1983–84 to 1995–96. Most of the increase occurred from 1983–84 to 1986–87 when current-fund expenditures per student rose 17 percent. From 1986–87 to 1995–96, when FTE enrollment rose 11 percent, current-fund expenditures per student rose 14 percent.

The trend for educational and general expenditures (table 40) is similar to that for current-fund expenditures.

Public 2-Year Institutions

Current-fund expenditures in public 2-year institutions increased 12 percent from 1983–84 to 1986–87 (table 41). A further 33-percent increase in current-fund expenditures occurred from 1986–87 to 1995–96, when FTE enrollments rose 21 percent.

A somewhat different pattern emerges when public 2-year current-fund expenditures are placed in per student terms. Between 1983–84 and 1986–87, current-fund expenditures per student rose 18 percent. From 1986–87 to 1995–96, current-fund expenditures per student rose 10 percent.

The trend for educational and general expenditures (table 42) is similar to that for current-fund expenditures.

Private 4-Year Institutions

Like public institutions, current-fund expenditures in private 4-year institutions rose rapidly throughout the 1980s and into the 1990s. From 1983–84 to 1995–96, total current-fund expenditures rose 62 percent (table 43).

Expenditures per student also increased significantly during the period from 1983–84 to 1995–96. The greatest increases occurred from 1983–84 to 1986–87, when current-fund expenditures per student rose 20 percent. After that, as enrollments increased, current expenditures per student have continued to increase, but not at as rapid a rate. From 1986–87 to 1995–96, current expenditures per student rose 15 percent.

The trend for educational and general expenditures (table 44) is similar to that for current-fund expenditures.

Alternative Projections

Projections have been prepared for each of the sectors of higher education. The methodology and assumptions used to produce these projections are discussed in appendix A6.

There are three sets of projections for the public 4-year, public 2-year, and private 4-year sectors. Due to the short time series of consistent data, only one set of projections was produced for the private 2-year sector. This set of projections for private 2-year institutions is not examined separately.

The projections in this chapter are presented in both constant 1996–97 dollars and current dollars. The projections were developed in constant dollars and then placed in current dollars using projections for the Consumer Price Index (CPI). Three alternative sets of projections for the CPI were used, one for use with the middle alternative projections, one for use with the low alternative projections, and one for use with the high alternative projections. As the set of projections for the CPI developed for use with the low alternative projections is rising at the most rapid rate and that developed for use with the high alternative projections is rising at the slowest rate, it is frequently the case that the current dollar projections from the low alternative set of projections are higher than those from the other two alternative sets of projections.

All of the alternative projections indicate an increase in current-fund expenditures throughout the remainder of the century. In the middle alternative projection, current-fund expenditures are projected to reach $265.5 billion in 2008–09. This is a 36-percent increase from 1995–96, the last year for which there are actual data. In the low alternative projection, current-fund expenditures are projected to increase to $259.3 billion. In the high alternative projection, the figure for 2008–09 is $271.2 billion.

A similar pattern is seen for educational and general expenditures. In the middle alternative projection, educational and general expenditures are projected to be $208.5 billion in 2008–09, a 34-percent increase from 1995–96. In the low alternative projection, educational and general expenditures are projected to increase to $202.5 billion. In the high alternative projection, the figure for 2008–09 is $214.0 billion.

It should be noted that private institutions are in the process of going from one accounting model to another. This change will affect revenues and expenditures of private institutions beginning with data for 1996–97. Work has also begun on changing the accounting model of public institutions, but a new accounting model for public institutions will probably not be implemented until the early part of the next century. The terms current-fund expenditures and educational and general expenditures are not used in the new accounting model for private institutions and will not be used in the new accounting model for public institutions. Cross-walks have been developed for use in comparing the data gathered from private institutions under the old accounting model and the new accounting model, but these cross-walks can only approximate the values for current-fund expenditures and educational and general expenditures that would have been produced under the old accounting model. Hence, there is uncertainly about the future of projections of higher education expenditures in future editions of *Projections of Education Statistics*.

Public 4-Year Institutions

There are only small differences in the trends among the various sectors of higher education. In public 4-year institutions, current-fund expenditures are projected to reach $138.4 billion in the middle alternative projection in 2008–09 (table 39). This is a 37-percent increase from 1995–96 to 2008–09. In the low alternative projection, the value for 2008–09 is $136.6 billion, and in the high alternative projection, it is $140.1 billion.

Since full-time-equivalent (FTE) enrollment is projected to increase by 15 percent from 1995–96 to 2008–09, the rate of increase for expenditures is lower on a per student basis. In the middle alternative projection, a 19-percent increase is projected for the period from 1995–96 to 2008–09 compared with 18 percent for the low alternative projection and 21 percent for the high alternative projection.

Public 2-Year Institutions

Expenditures are also projected to increase in public 2-year institutions. For instance, in the middle alternative projection, current-fund expenditures are projected to reach $29.0 billion in 2008–09 and expenditures per student are projected to increase to $8,397. When the low alternative projection is used, with its lower growth path for revenues of state and local governments per capita, lower values for current expenditures are found. When the high alternative projection is used, with its higher growth path for revenues of state and local governments per capita, higher values are found.

Private 4-Year Institutions

The trends for private 4-year institutions exhibit the same patterns as other types of institutions. Total current-fund expenditures are seen as increasing each year. In the middle alternative projection, from 1995–96 to 2008–09, they are projected to increase 36 percent. Current-fund expenditures per student are projected to increase 19 percent during the same time.

Figure 60

Current-fund expenditures of public and private institutions of higher education (in constant 1996-97 dollars), with middle alternative projections: 1983-84 to 2008-09

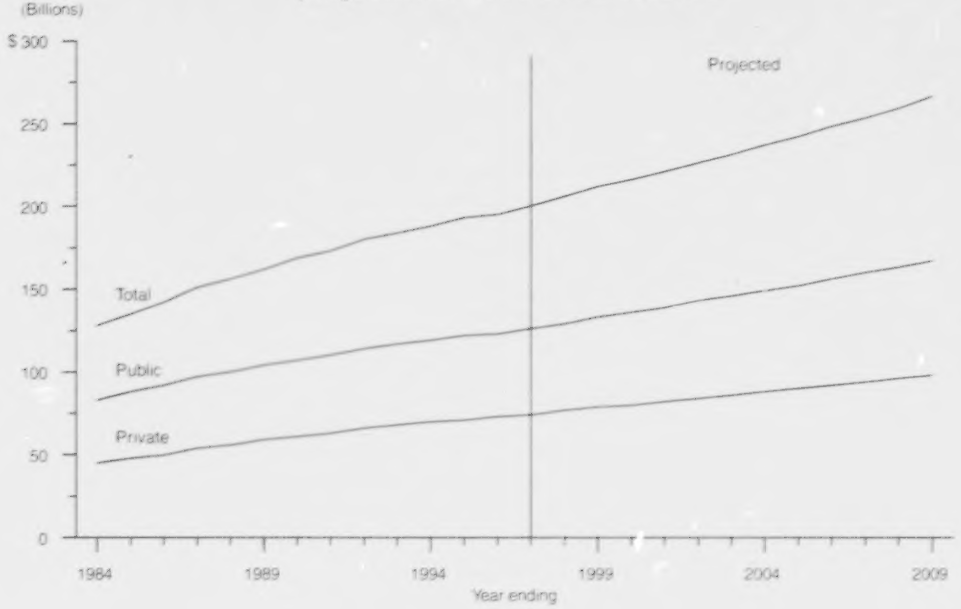

Figure 61

Educational and general expenditures of public and private institutions of higher education (in constant 1996-97 dollars), with middle alternative projections: 1983-84 to 2008-09

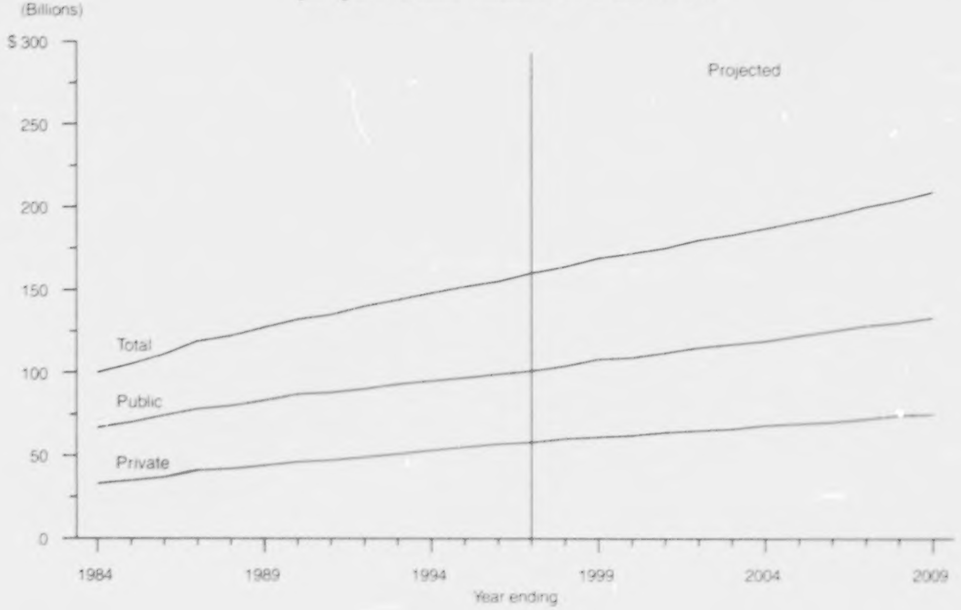

Table 37.—Current-fund expenditures of public and private institutions of higher education, with alternative projections: 1983–84 to 2008–09

Year ending	Constant 1996–97 dollars[1] (in billions)			Current dollars (in billions)		
	Total	Public	Private	Total	Public	Private
1984	$128.1	$82.9	$45.1	$82.0	$53.1	$28.9
1985	135.2	87.6	47.5	90.0	58.3	31.6
1986	142.4	92.3	50.2	97.5	63.2	34.3
1987	151.1	96.6	54.4	105.8	67.7	38.1
1988	156.1	99.6	56.4	113.8	72.6	41.1
1989	162.5	103.5	58.9	123.9	78.9	44.9
1990	168.5	107.4	61.2	134.7	85.8	48.9
1991	173.3	110.3	63.0	146.1	93.0	53.1
1992	179.6	113.7	65.9	156.2	98.8	57.3
1993	184.3	116.6	67.7	165.2	104.6	60.7
1994	188.4	118.8	69.6	173.4	109.3	64.0
1995	193.3	122.0	71.3	183.0	115.5	67.5
1996	195.4	122.8	72.6	190.0	119.4	70.6
1997[2]	199.9	125.9	74.0	199.9	125.9	74.0
			Middle alternative projections			
1998	205.9	129.0	76.9	209.6	131.3	78.3
1999	212.1	133.3	78.8	220.4	138.5	81.9
2000	216.1	136.2	79.9	230.7	145.4	85.3
2001	220.9	139.3	81.6	242.6	153.0	89.6
2002	226.4	142.9	83.6	255.7	161.3	94.3
2003	231.1	145.6	85.5	268.6	169.2	99.4
2004	236.5	148.9	87.6	—	—	—
2005	242.0	152.3	89.7	—	—	—
2006	247.6	155.9	91.7	—	—	—
2007	253.4	159.6	93.8	—	—	—
2008	259.4	163.4	96.0	—	—	—
2009	265.5	167.4	98.1	—	—	—
			Low alternative projections			
1998	205.9	129.0	76.9	209.6	131.3	78.3
1999	210.8	133.3	77.5	221.5	140.1	81.4
2000	214.1	135.9	78.2	235.0	149.2	85.8
2001	218.3	138.6	79.7	250.9	159.3	91.5
2002	223.1	141.7	81.4	268.3	170.4	97.9
2003	227.2	143.9	83.3	286.3	181.3	104.9
2004	232.1	146.8	85.2	—	—	—
2005	237.2	150.0	87.2	—	—	—
2006	242.6	153.4	89.2	—	—	—
2007	248.0	156.9	91.1	—	—	—
2008	253.5	160.3	93.2	—	—	—
2009	259.3	164.0	95.2	—	—	—
			High alternative projections			
1998	205.9	129.0	76.9	209.6	131.3	78.3
1999	213.1	133.3	79.8	219.7	137.4	82.3
2000	217.8	136.5	81.3	228.0	142.9	85.1
2001	223.3	140.1	83.1	237.6	149.1	88.4
2002	229.8	144.5	85.3	248.4	156.2	92.2
2003	235.3	147.9	87.4	258.8	162.7	96.1
2004	241.0	151.5	89.5	—	—	—
2005	246.6	154.9	91.7	—	—	—
2006	252.4	158.7	93.8	—	—	—
2007	258.4	162.5	95.9	—	—	—
2008	264.6	166.4	98.2	—	—	—
2009	271.2	170.6	100.5	—	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys; Higher Education Full-Time-Equivalent Enrollment Model; and Higher Education Institutions Expenditure Models. (This table was prepared August 1998.)

Table 38.—Educational and general expenditures of public and private institutions of higher education, with alternative projections: 1983–84 to 2008–09

Year ending	Constant 1996–97 dollars[1] (in billions)			Current dollars (in billions)		
	Total	Public	Private	Total	Public	Private
1984	$99.6	$66.5	$33.0	$63.7	$42.6	$21.1
1985	105.3	70.4	34.8	70.1	46.9	23.2
1986	111.2	74.3	36.9	76.1	50.9	25.3
1987	118.5	77.7	40.9	83.0	54.4	28.6
1988	122.3	80.4	41.9	89.2	58.6	30.5
1989	127.0	83.2	43.8	96.8	63.4	33.4
1990	132.2	86.6	45.6	105.6	69.2	36.4
1991	135.4	88.3	47.2	114.1	74.4	39.7
1992	139.8	90.3	49.5	121.6	78.6	43.0
1993	143.8	92.8	51.0	129.0	83.2	45.8
1994	147.8	94.7	53.1	136.0	87.1	48.9
1995	152.3	97.4	54.9	144.2	92.2	52.0
1996	155.2	98.7	56.5	150.9	96.0	55.0
1997[2]	159.5	101.4	58.2	159.5	101.4	58.2
			Middle alternative projections			
1998	163.9	104.1	59.8	166.8	106.0	60.9
1999	169.1	107.6	61.5	175.7	111.8	63.9
2000	171.9	109.5	62.4	183.5	116.9	66.6
2001	175.4	111.7	63.7	192.7	122.7	69.9
2002	179.6	114.6	65.0	202.8	129.4	73.4
2003	182.9	116.8	66.1	212.6	135.8	76.8
2004	187.0	119.5	67.5	—	—	—
2005	191.1	122.1	69.0	—	—	—
2006	195.2	124.8	70.4	—	—	—
2007	199.5	127.6	71.9	—	—	—
2008	203.9	130.4	73.5	—	—	—
2009	208.5	133.4	75.2	—	—	—
			Low alternative projections			
1998	163.9	104.1	59.8	166.8	106.0	60.9
1999	167.8	107.6	60.2	176.4	113.1	63.3
2000	170.1	109.2	60.8	186.6	119.9	66.8
2001	173.0	111.1	61.9	198.8	127.7	71.1
2002	176.4	113.4	63.0	212.2	136.4	75.8
2003	179.2	115.2	64.0	225.8	145.2	80.6
2004	182.7	117.5	65.3	—	—	—
2005	186.5	119.9	66.6	—	—	—
2006	190.4	122.5	67.9	—	—	—
2007	194.3	125.0	69.3	—	—	—
2008	198.3	127.5	70.8	—	—	—
2009	202.5	130.2	72.3	—	—	—
			High alternative projections			
1998	163.9	104.1	59.8	166.8	106.0	60.9
1999	170.0	107.6	62.4	175.2	110.9	64.3
2000	173.5	109.8	63.7	181.7	114.9	66.7
2001	177.7	112.5	65.1	189.1	119.7	69.3
2002	182.8	116.1	66.7	197.6	125.5	72.1
2003	186.9	119.0	67.9	205.7	130.9	74.7
2004	191.3	121.9	69.4	—	—	—
2005	195.5	124.6	70.9	—	—	—
2006	199.9	127.5	72.5	—	—	—
2007	204.4	130.4	74.1	—	—	—
2008	209.1	133.3	75.8	—	—	—
2009	214.0	136.4	77.6	—	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys; Higher Education Full-Time-Equivalent Enrollment Model; and Higher Education Institutions Expenditure Models. (This table was prepared August 1998.)

Table 39.—Current-fund expenditures and current-fund expenditures per full-time-equivalent (FTE) student of public 4-year institutions, with alternative projections: 1983–84 to 2008–09

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1996–97 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1984	4,266	$68.1	$15,959	$43.6	$10,218
1985	4,238	72.2	17,029	48.0	11,330
1986	4,240	76.2	17,976	52.2	12,309
1987	4,295	80.0	18,625	56.0	13,038
1988	4,396	82.5	18,762	60.1	13,680
1989	4,506	85.7	19,022	65.3	14,503
1990	4,620	88.7	19,200	70.9	15,339
1991	4,740	91.0	19,205	76.7	16,186
1992	4,796	93.5	19,502	81.3	16,960
1993	4,798	96.0	20,003	86.1	17,938
1994	4,766	97.5	20,452	89.7	18,820
1995	4,750	100.3	21,108	94.9	19,980
1996	4,757	100.7	21,163	97.9	20,579
1997[2]	4,767	103.2	21,649	103.2	21,649
Middle alternative projections					
1998	4,757	105.6	22,194	107.5	22,591
1999	4,825	108.9	22,567	113.1	23,449
2000	4,935	111.6	22,617	119.2	24,146
2001	5,017	114.4	22,803	125.7	25,045
2002	5,064	117.4	23,176	132.5	26,169
2003	5,074	119.8	23,602	139.2	27,429
2004	5,119	122.6	23,950	—	—
2005	5,175	125.5	24,253	—	—
2006	5,241	128.6	24,532	—	—
2007	5,320	131.8	24,767	—	—
2008	5,400	135.0	24,998	—	—
2009	5,491	138.4	25,205	—	—
Low alternative projections					
1998	4,757	105.6	22,194	107.5	22,591
1999	4,825	108.9	22,567	114.4	23,716
2000	4,935	111.5	22,587	122.3	24,788
2001	5,017	114.0	22,732	131.1	26,124
2002	5,064	116.7	23,048	140.4	27,723
2003	5,074	118.9	23,425	149.7	29,514
2004	5,119	121.5	23,731	—	—
2005	5,175	124.3	24,013	—	—
2006	5,241	127.2	24,276	—	—
2007	5,320	130.3	24,487	—	—
2008	5,400	133.4	24,694	—	—
2009	5,491	136.6	24,877	—	—
High alternative projections					
1998	4,757	105.6	22,194	107.5	22,591
1999	4,825	108.9	22,567	112.2	23,263
2000	4,935	111.8	22,652	117.0	23,714
2001	5,017	114.9	22,892	122.2	24,359
2002	5,064	118.2	23,341	127.8	25,232
2003	5,074	121.0	23,845	133.1	26,233
2004	5,119	124.0	24,216	—	—
2005	5,175	126.9	24,524	—	—
2006	5,241	130.0	24,812	—	—
2007	5,320	133.3	25,058	—	—
2008	5,400	136.6	25,299	—	—
2009	5,491	140.1	25,520	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys; Higher Education Full-Time-Equivalent Enrollment Model; and Public 4-Year Institutions Current-Fund Expenditure Model. (This table was prepared August 1998.)

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Table 40.—Educational and general expenditures and educational and general expenditures per full-time-equivalent (FTE) student of public 4-year institutions, with alternative projections: 1983–84 to 2008–09

Year ending	Full-time-equivalent enrollment (in thousands)	Educational and general expenditures			
		Constant 1996–97 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1984	4,266	$52.7	$12,365	$33.8	$7,917
1985	4,238	56.1	13,226	37.3	8,800
1986	4,240	59.3	13,991	40.6	9,580
1987	4,295	62.2	14,471	43.5	10,130
1988	4,396	64.4	14,655	47.0	10,685
1989	4,506	66.6	14,781	50.8	11,270
1990	4,620	69.2	14,980	55.3	11,968
1991	4,740	70.3	14,837	59.3	12,504
1992	4,796	71.6	14,935	62.3	12,988
1993	4,798	73.5	15,329	66.0	13,747
1994	4,766	74.8	15,686	68.8	14,435
1995	4,750	77.0	16,219	72.9	15,352
1996	4,757	78.0	16,387	75.8	15,936
1997[2]	4,767	80.0	16,791	80.0	16,791
Middle alternative projections					
1998	4,757	82.1	17,256	83.6	17,565
1999	4,825	84.6	17,529	87.9	18,214
2000	4,935	86.3	17,496	92.2	18,678
2001	5,017	88.3	17,596	97.0	19,327
2002	5,064	90.5	17,880	102.2	20,189
2003	5,074	92.5	18,231	107.5	21,186
2004	5,119	94.7	18,493	—	—
2005	5,175	96.8	18,712	—	—
2006	5,241	99.1	18,902	—	—
2007	5,320	101.3	19,048	—	—
2008	5,400	103.6	19,190	—	—
2009	5,491	106.0	19,304	—	—
Low alternative projections					
1998	4,757	82.1	17,256	83.6	17,565
1999	4,825	84.6	17,529	88.9	18,422
2000	4,935	86.2	17,469	94.6	19,172
2001	5,017	88.0	17,533	101.1	20,150
2002	5,064	90.0	17,768	108.2	21,372
2003	5,074	91.7	18,075	115.5	22,773
2004	5,119	93.7	18,301	—	—
2005	5,175	95.7	18,500	—	—
2006	5,241	97.9	18,677	—	—
2007	5,320	100.0	18,801	—	—
2008	5,400	102.2	18,922	—	—
2009	5,491	104.4	19,016	—	—
High alternative projections					
1998	4,757	82.1	17,256	83.6	17,565
1999	4,825	84.6	17,529	87.2	18,070
2000	4,935	86.5	17,526	90.5	18,348
2001	5,017	88.7	17,674	94.4	18,807
2002	5,064	91.3	18,026	98.7	19,486
2003	5,074	93.6	18,444	103.0	20,292
2004	5,119	95.9	18,727	—	—
2005	5,175	98.1	18,950	—	—
2006	5,241	100.4	19,149	—	—
2007	5,320	102.7	19,304	—	—
2008	5,400	105.1	19,454	—	—
2009	5,491	107.5	19,581	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys; Higher Education Full-Time-Equivalent Enrollment Model; and Public 4-Year Institutions Educational and General Expenditure Model. (This table was prepared August 1998.)

Table 41.—Current-fund expenditures and current-fund expenditures per full-time-equivalent (FTE) student of public 2-year institutions, with alternative projections: 1983–84 to 2008–09

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1996–97 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1984	2,616	$14.8	$5,671	$9.5	$3,631
1985	2,447	15.5	6,325	10.3	4,209
1986	2,428	16.1	6,622	11.0	4,534
1987	2,483	16.6	6,704	11.7	4,693
1988	2,542	17.2	6,748	12.5	4,920
1989	2,591	17.8	6,882	13.6	5,247
1990	2,752	18.7	6,780	14.9	5,417
1991	2,818	19.3	6,838	16.2	5,763
1992	3,067	20.1	6,566	17.5	5,710
1993	3,114	20.6	6,627	18.5	5,943
1994	3,046	21.3	6,996	19.6	6,438
1995	3,035	21.7	7,161	20.6	6,778
1996	2,995	22.1	7,383	21.5	7,180
1997[2]	3,008	22.7	7,551	22.7	7,551
Middle alternative projections					
1998	3,038	23.4	7,703	23.8	7,841
1999	3,098	24.4	7,880	25.4	8,189
2000	3,165	24.6	7,768	26.2	8,293
2001	3,208	24.9	7,764	27.4	8,528
2002	3,228	25.5	7,907	28.8	8,928
2003	3,226	25.8	8,009	30.0	9,307
2004	3,246	26.3	8,114	—	—
2005	3,280	26.8	8,179	—	—
2006	3,314	27.3	8,252	—	—
2007	3,355	27.9	8,307	—	—
2008	3,400	28.4	8,353	—	—
2009	3,454	29.0	8,397	—	—
Low alternative projections					
1998	3,038	23.4	7,703	23.8	7,841
1999	3,098	24.4	7,880	25.7	8,282
2000	3,165	24.4	7,726	26.8	8,479
2001	3,208	24.6	7,666	28.3	8,810
2002	3,228	25.0	7,731	30.0	9,299
2003	3,226	25.1	7,765	31.6	9,783
2004	3,246	25.4	7,813	—	—
2005	3,280	25.7	7,849	—	—
2006	3,314	26.2	7,900	—	—
2007	3,355	26.6	7,921	—	—
2008	3,400	27.0	7,934	—	—
2009	3,454	27.4	7,945	—	—
High alternative projections					
1998	3,038	23.4	7,703	23.8	7,841
1999	3,098	24.4	7,880	25.2	8,124
2000	3,165	24.7	7,816	25.9	8,182
2001	3,208	25.3	7,886	26.9	8,391
2002	3,228	26.3	8,135	28.4	8,794
2003	3,226	26.9	8,343	29.6	9,178
2004	3,246	27.5	8,480	—	—
2005	3,280	28.0	8,552	—	—
2006	3,314	28.6	8,638	—	—
2007	3,355	29.2	8,707	—	—
2008	3,400	29.8	8,767	—	—
2009	3,454	30.5	8,830	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys; Higher Education Full-Time-Equivalent Enrollment Model; and Public 2-Year Institutions Current-Fund Expenditure Model. (This table was prepared August 1998.)

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Table 42.—Educational and general expenditures and educational and general expenditures per full-time-equivalent (FTE) student of public 2-year institutions, with alternative projections: 1983–84 to 2008–09

Year ending	Full-time-equivalent enrollment (in thousands)	Educational and general expenditures			
		Constant 1996–97 dollars [1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1984	2,616	$13.8	$5,267	$8.8	$3,372
1985	2,447	14.4	5,884	9.6	3,915
1986	2,428	15.0	6,170	10.3	4,225
1987	2,483	15.5	6,241	10.8	4,369
1988	2,542	16.0	6,296	11.7	4,590
1989	2,591	16.6	6,412	12.7	4,888
1990	2,752	17.4	6,312	13.9	5,042
1991	2,818	17.9	6,368	15.1	5,367
1992	3,067	18.7	6,099	16.3	5,304
1993	3,114	19.2	6,180	17.3	5,542
1994	3,046	19.9	6,543	18.3	6,021
1995	3,035	20.3	6,704	19.3	6,346
1996	2,995	20.7	6,924	20.2	6,733
1997[2]	3,008	21.3	7,088	21.3	7,088
Middle alternative projections					
1998	3,038	22.0	7,240	22.4	7,370
1999	3,098	23.0	7,426	23.9	7,717
2000	3,165	23.1	7,315	24.7	7,809
2001	3,208	23.4	7,309	25.7	8,027
2002	3,228	24.0	7,449	27.2	8,411
2003	3,226	24.3	7,542	28.3	8,765
2004	3,246	24.8	7,643	—	—
2005	3,280	25.3	7,707	—	—
2006	3,314	25.8	7,779	—	—
2007	3,355	26.3	7,833	—	—
2008	3,400	26.8	7,880	—	—
2009	3,454	27.4	7,926	—	—
Low alternative projections					
1998	3,038	22.0	7,240	22.4	7,370
1999	3,098	23.0	7,426	24.2	7,805
2000	3,165	23.0	7,271	25.3	7,980
2001	3,208	23.1	7,207	26.6	8,282
2002	3,228	23.5	7,267	28.2	8,741
2003	3,226	23.5	7,290	29.6	9,185
2004	3,246	23.8	7,332	—	—
2005	3,280	24.2	7,366	—	—
2006	3,314	24.6	7,415	—	—
2007	3,355	24.9	7,435	—	—
2008	3,400	25.3	7,447	—	—
2009	3,454	25.8	7,459	—	—
High alternative projections					
1998	3,038	22.0	7,240	22.4	7,370
1999	3,098	23.0	7,426	23.7	7,656
2000	3,165	23.3	7,364	24.4	7,709
2001	3,208	23.8	7,435	25.4	7,911
2002	3,228	24.8	7,685	26.8	8,307
2003	3,226	25.4	7,887	28.0	8,677
2004	3,246	26.0	8,021	—	—
2005	3,280	26.5	8,092	—	—
2006	3,314	27.1	8,178	—	—
2007	3,355	27.7	8,247	—	—
2008	3,400	28.2	8,307	—	—
2009	3,454	28.9	8,374	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys; Higher Education Full-Time-Equivalent Enrollment Model; and Public 2-Year Institutions Educational and General Expenditure Model. (This table was prepared August 1998.)

Table 43.—Current-fund expenditures and current-fund expenditures per full-time-equivalent (FTE) student of private 4-year institutions, with alternative projections: 1983–84 to 2008–09

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1996–97 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1984	2,059	$43.9	$21,304	$28.1	$13,641
1985	2,055	46.2	22,471	30.7	14,951
1986	2,055	48.7	23,723	33.4	16,244
1987	2,065	52.8	25,578	37.0	17,905
1988	2,091	54.9	26,238	40.0	19,130
1989	2,158	57.4	26,611	43.8	20,289
1990	2,194	59.7	27,224	47.7	21,749
1991	2,228	61.5	27,626	51.9	23,282
1992	2,286	64.4	28,192	56.0	24,518
1993	2,331	66.1	28,332	59.2	25,406
1994	2,355	67.9	28,825	62.5	26,526
1995	2,388	69.7	29,200	66.0	27,639
1996	2,416	71.1	29,435	69.1	28,623
1997[2]	2,464	72.5	29,439	72.5	29,439
			Middle alternative projections		
1998	2,403	75.3	31,346	76.7	31,908
1999	2,432	77.2	31,763	80.3	33,005
2000	2,483	78.3	31,530	83.6	33,661
2001	2,519	79.9	31,723	87.8	34,842
2002	2,539	81.9	32,253	92.5	36,418
2003	2,543	83.9	32,977	97.5	38,323
2004	2,564	85.9	33,505	—	—
2005	2,592	88.0	33,951	—	—
2006	2,625	90.0	34,288	—	—
2007	2,663	92.1	34,565	—	—
2008	2,703	94.2	34,853	—	—
2009	2,746	96.4	35,084	—	—
			Low alternative projections		
1998	2,403	75.3	31,346	76.7	31,908
1999	2,432	75.9	31,199	79.7	32,788
2000	2,483	76.6	30,847	84.0	33,854
2001	2,519	78.0	30,966	89.7	35,588
2002	2,539	79.8	31,414	95.9	37,786
2003	2,543	81.6	32,106	102.9	40,452
2004	2,564	83.6	32,592	—	—
2005	2,592	85.6	33,008	—	—
2006	2,625	87.5	33,324	—	—
2007	2,663	89.4	33,570	—	—
2008	2,703	91.4	33,826	—	—
2009	2,746	93.4	34,025	—	—
			High alternative projections		
1998	2,403	75.3	31,346	76.7	31,908
1999	2,432	78.2	32,174	80.7	33,167
2000	2,483	79.7	32,100	83.4	33,604
2001	2,519	81.5	32,340	86.7	34,413
2002	2,539	83.7	32,946	90.4	35,615
2003	2,543	85.7	33,703	94.3	37,079
2004	2,564	87.8	34,253	—	—
2005	2,592	90.0	34,718	—	—
2006	2,625	92.1	35,071	—	—
2007	2,663	94.2	35,364	—	—
2008	2,703	96.4	35,682	—	—
2009	2,746	98.7	35,955	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys; Higher Education Full-Time-Equivalent Enrollment Model; and Private 4-Year Institutions Current-Fund Expenditure Model. (This table was prepared August 1998.)

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Table 44.—Educational and general expenditures and educational and general expenditures per full-time-equivalent (FTE) student of private 4-year institutions, with alternative projections: 1983–84 to 2008–09

Year ending	Full-time-equivalent enrollment (in thousands)	Educational and general expenditures			
		Constant 1996–97 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1984	2,059	$31.9	$15,500	$20.4	$9,924
1985	2,055	33.7	16,376	22.4	10,896
1986	2,055	35.6	17,340	24.4	11,873
1987	2,065	39.4	19,067	27.6	13,347
1988	2,091	40.4	19,337	29.5	14,099
1989	2,158	42.4	19,658	32.3	14,988
1990	2,194	44.3	20,176	35.4	16,119
1991	2,228	45.8	20,556	38.6	17,324
1992	2,286	48.1	21,037	41.8	18,295
1993	2,331	49.6	21,257	44.4	19,063
1994	2,355	51.6	21,902	47.5	20,155
1995	2,388	53.5	22,400	50.6	21,202
1996	2,416	55.2	22,845	53.7	22,215
1997[2]	2,464	56.9	23,077	56.9	23,077
			Middle alternative projections		
1998	2,403	58.4	24,304	59.5	24,739
1999	2,432	60.1	24,692	62.4	25,657
2000	2,483	61.0	24,553	65.1	26,212
2001	2,519	62.2	24,689	68.3	27,117
2002	2,539	63.5	25,017	71.7	28,248
2003	2,543	64.6	25,416	75.1	29,537
2004	2,564	66.0	25,743	—	—
2005	2,592	67.4	26,024	—	—
2006	2,625	68.9	26,232	—	—
2007	2,663	70.4	26,416	—	—
2008	2,703	71.9	26,612	—	—
2009	2,746	73.6	26,782	—	—
			Low alternative projections		
1998	2,403	58.4	24,304	59.5	24,739
1999	2,432	58.8	24,180	61.8	25,411
2000	2,483	59.4	23,920	65.2	26,252
2001	2,519	60.4	23,981	69.4	27,560
2002	2,539	61.5	24,224	74.0	29,138
2003	2,543	62.5	24,586	78.8	30,977
2004	2,564	63.8	24,864	—	—
2005	2,592	65.1	25,109	—	—
2006	2,625	66.4	25,291	—	—
2007	2,663	67.8	25,440	—	—
2008	2,703	69.2	25,601	—	—
2009	2,746	70.7	25,737	—	—
			High alternative projections		
1998	2,403	58.4	24,304	59.5	24,739
1999	2,432	61.0	25,068	62.8	25,842
2000	2,483	62.3	25,084	65.2	26,260
2001	2,519	63.7	25,273	67.8	26,893
2002	2,539	65.2	25,681	70.5	27,761
2003	2,543	66.4	26,124	73.1	28,741
2004	2,564	67.9	26,483	—	—
2005	2,592	69.4	26,791	—	—
2006	2,625	70.9	27,019	—	—
2007	2,663	72.5	27,223	—	—
2008	2,703	74.2	27,449	—	—
2009	2,746	76.0	27,662	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 2003 due to the uncertain behavior of inflation over the long term.

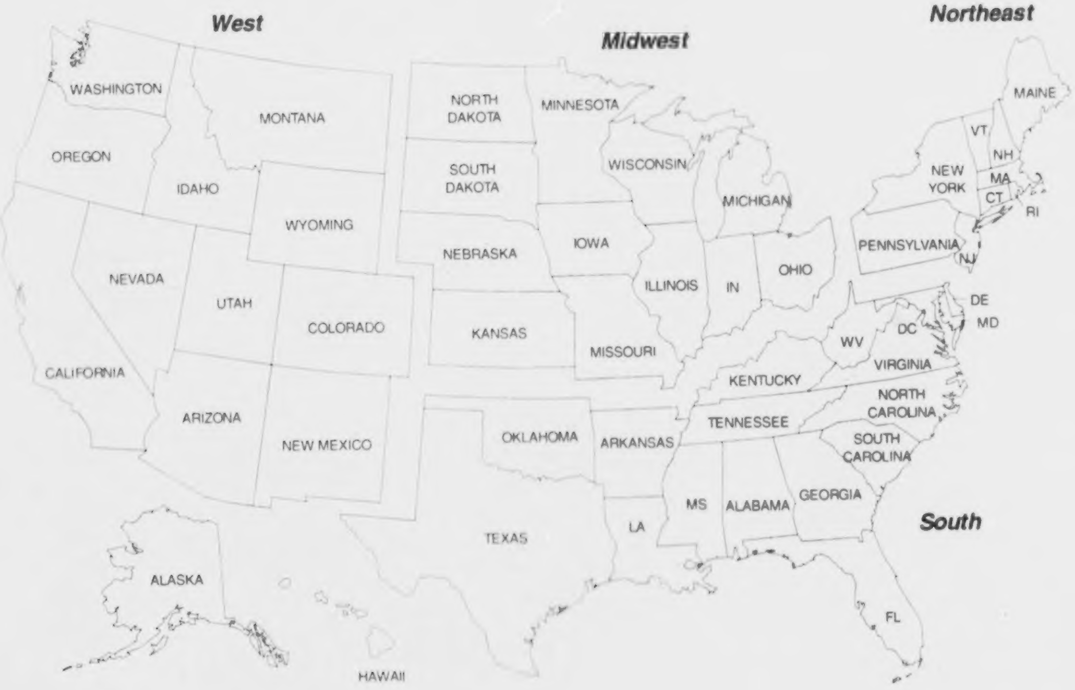
NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys; Higher Education Full-Time-Equivalent Enrollment Model; and Private 4-Year Institutions Educational and General Expenditure Model. (This table was prepared August 1998.)

State-Level Projections

Figure 62

Map of the United States, by region


West
Midwest
Northeast
South
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
ALASKA
HAWAII
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
MINNESOTA
IOWA
MISSOURI
WISCONSIN
ILLINOIS
MICHIGAN
IN
OHIO
OKLAHOMA
TEXAS
ARKANSAS
LA
MS
ALABAMA
TENNESSEE
KENTUCKY
GEORGIA
FL
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WV
DC
MD
DE
PENNSYLVANIA
NJ
NEW YORK
CT
RI
MA
NH
VT
MAINE

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Chapter 8

Public Elementary and Secondary Enrollment

Public elementary and secondary school enrollment is projected to rise between 1997 and the year 2009, but growth will vary widely across the Nation (table 45 and figure 63). Enrollment will increase in the Western and Southern regions, where public school enrollment is expected to rise 11 percent and 5 percent, respectively. A decrease of 2 percent is projected for the Northeastern region, while a decrease of 1 percent is expected in the Midwestern region (table 46 and figure 64).

Public School Enrollment

Over the projection period, public school enrollment is expected to vary across states. The Northeast will have enrollment decreases in eight out of nine states. Decreases will occur in Connecticut (3 percent), Maine (9 percent), Massachusetts (1 percent), New Hampshire (0.6 percent), New York (1 percent), Pennsylvania (4 percent), Rhode Island (4 percent), and Vermont (6 percent). An increase of 2 percent is expected in New Jersey. Over the projection period, enrollment will grow between 1997 and 2003 in most states, while it will decline between 2003 and 2009.

In the Midwest, enrollment will increase in three of the states between 1997 and 2009. Increases are projected for Illinois (7 percent), Indiana (3 percent), and South Dakota (1.0 percent). Decreases are projected for Iowa (6 percent), Kansas (0.8 percent), Michigan (4 percent), Minnesota (3 percent), Missouri (0.6 percent), Nebraska (2 percent), North Dakota (8 percent), Ohio (5 percent), and Wisconsin (3 percent).

Enrollment increases are projected for many of the Southern states between 1997 and 2009. Increases are projected for Georgia (12 percent), North Carolina (7 percent), Tennessee (8 percent), and Texas (11 percent). Smaller increases are expected for Alabama (2 percent), Delaware (0.9 percent), Florida (4 percent), Maryland (2 percent), Mississippi (0.6 percent), and Virginia (4 percent). Decreases in enrollment have been projected for Arkansas (0.6 percent), the District of Columbia (10 percent), Kentucky (2 percent), Louisiana (5 percent), Oklahoma (6 percent), South Carolina (5 percent), and West Virginia (7 percent).

All of the states in the West are expected to show increases in enrollment between 1997 and 2009. Increases are expected in Alaska (9 percent), Arizona (21 percent), California (10 percent), Colorado (9 percent), Hawaii (18 percent), Idaho (20 percent), Nevada (28 percent), New Mexico (15 percent), and Utah (11 percent) over the projection period. Smaller increases are expected in Montana (3 percent), Oregon (4 percent), Washington (6 percent), and Wyoming (3 percent).

Elementary Enrollment

Between 1997 and 2009, public elementary school enrollment in kindergarten through grade 8 (K–8) is expected to increase by less than 1 percent. Increases in elementary enrollment are expected to occur in less than half of the states across the Nation (table 47 and figure 65). These expected increases in elementary enrollment are a reflection of immigration and the rising number of births beginning in 1977, rather than changes in the attendance rates of young children. The NCES projections do not account for enrollment increases that may be caused by changing state and local policies about the provision of prekindergarten and kindergarten programs. Expansion of these programs could lead to higher enrollments at the elementary school level.

Elementary enrollment is expected to show a decrease of 6 percent in the Northeast between 1997 and 2009 (table 48 and figure 66). All states are expected to show decreases. These decreases are projected for Connecticut (9 percent), Maine (9 percent), Massachusetts (6 percent), New Hampshire (3 percent), New Jersey (2 percent), New York (6 percent), Pennsylvania (6 percent), Rhode Island (7 percent), and Vermont (6 percent).

A decrease in elementary enrollment has been projected for the Midwestern region. Between 1997 and 2009, enrollment in the Midwest is projected to decrease by 3 percent. Ten of the twelve states in this region are projected to show decreases. These will occur in Illinois (1 percent), Iowa (5 percent), Kansas (0.6 percent), Michigan (6 percent), Minnesota (4 percent), Missouri (3 percent), Nebraska (0.4 percent), North Dakota (5 percent), Ohio (6 percent), and Wisconsin (4 percent). Increases are expected for Indiana (2 percent) and South Dakota (4 percent).

An increase of 2 percent is expected for the Southern region between 1997 and 2009. Increases are expected in Georgia (8 percent) and Texas (8 percent). Smaller increases are projected for Alabama (1 percent), Tennessee (4 percent), and Virginia (0.4 percent). Decreases are projected for Arkansas (2 percent), Delaware (2 percent), the District of Columbia (11 percent), Florida (2 percent), Kentucky (3 percent), Louisiana (4 percent), Maryland (0.9 percent), North Carolina (0.6 percent), Oklahoma (6 percent), South Carolina (6 percent), and West Virginia (5 percent). Most of the growth in the states will occur between 1997 and 2003.

Elementary enrollment in the Western states is expected to rise between 1997 and 2009, an increase of 8 percent. Over the projection period, enrollment increases are anticipated for Alaska (10 percent), Arizona (12 percent), Hawaii (16 percent), Idaho (21 percent), Nevada (14 percent), New Mexico (16 percent), Utah (13 percent), and Wyoming (10 percent). Other enrollment increases are projected for California (7 percent), Colorado (6 percent), Montana (5 percent), Oregon (3 percent), and Washington (4 percent). Most of the growth in the states will occur between 1997 and 2003.

High School Enrollment

Between 1997 and 2009, enrollment in public high schools (grades 9 through 12) is expected to increase by 12 percent (table 49 and figure 67). Over the projection period, enrollment increases are projected in all of the regions.

The Northeast is projected to increase by 8 percent between 1997 and 2009 (table 50 and figure 68). Increases are expected in Connecticut (11 percent), Massachusetts (12 percent), New Jersey (13 percent), and New York (10 percent). Other enrollment increases are expected for New Hampshire (4 percent), Pennsylvania (3 percent), and Rhode Island (2 percent). Decreases are projected for Maine (11 percent) and Vermont (6 percent). Most of growth in the states will occur between 1997 and 2003.

The Midwestern region is expected to show an increase of 5 percent in high school enrollment between 1997 and 2009. An increase of 26 percent is projected in Illinois. Other enrollment increases are expected in Indiana (7 percent), Michigan (2 percent), Minnesota (0.1 percent), and Missouri (4 percent). Decreases are projected in Iowa (8 percent), Kansas (1 percent), Nebraska (4 percent), North Dakota (13 percent), Ohio (2 percent), South Dakota (5 percent), and Wisconsin (0.5 percent).

Between 1997 and 2009, public high school enrollment in the South is projected to increase by 13 percent. Over the projection period, increases are expected in Florida (22 percent), Georgia (25 percent), Maryland (11 percent), North Carolina (29 percent), Tennessee (17 percent), Texas (19 percent), and Virginia (12 percent). Other increases are expected for Alabama (4 percent), Arkansas (3 percent), Delaware (7 percent), and Mississippi (2 percent). Decreases are expected for District of Columbia (9 percent), Kentucky (0.8 percent), Louisiana (6 percent), Oklahoma (5 percent), South Carolina (3 percent), and West Virginia (10 percent).

The Western region's public high school enrollment is expected to increase by 20 percent between 1997 and 2009. Between 1997 and 2009, increases have been projected for Arizona (48 percent), California (20 percent), Colorado (17 percent), Hawaii (22 percent), Idaho (17 percent), Nevada (68 percent), New Mexico (14 percent), and Washington (10 percent). Smaller increases are expected for Alaska (6 percent), Oregon (8 percent), and Utah (6 percent). Decreases are expected for Montana (3 percent) and Wyoming (12 percent).

Figure 63
Percent change in grades K-12 enrollment in public schools, by state: Fall 1997 to fall 2009

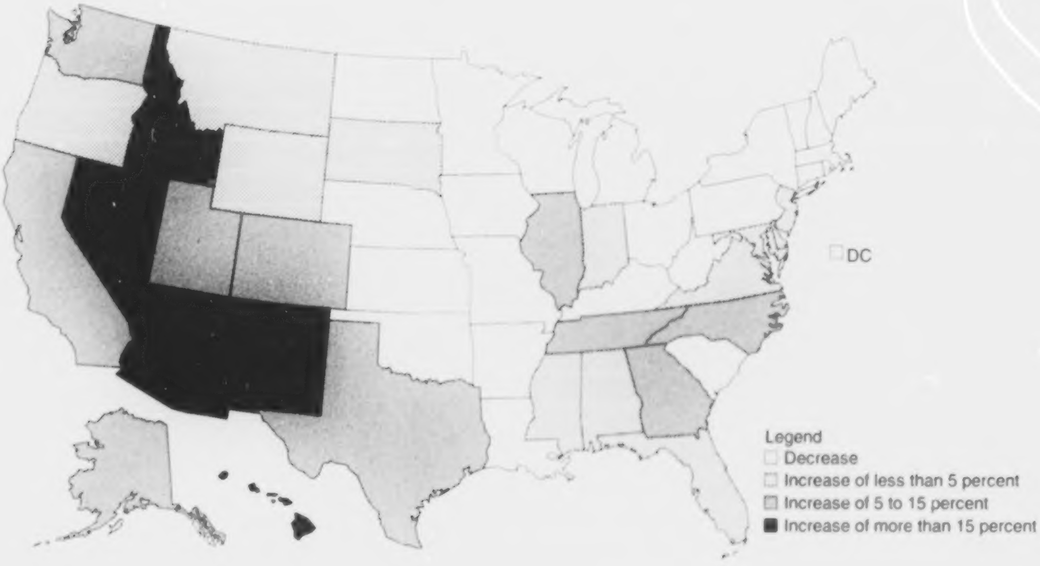
DC
Legend
☐ Decrease
☐ Increase of less than 5 percent
▨ Increase of 5 to 15 percent
■ Increase of more than 15 percent

Figure 64
Percent change in public K-12 enrollment, by region: Fall 1997 to fall 2009

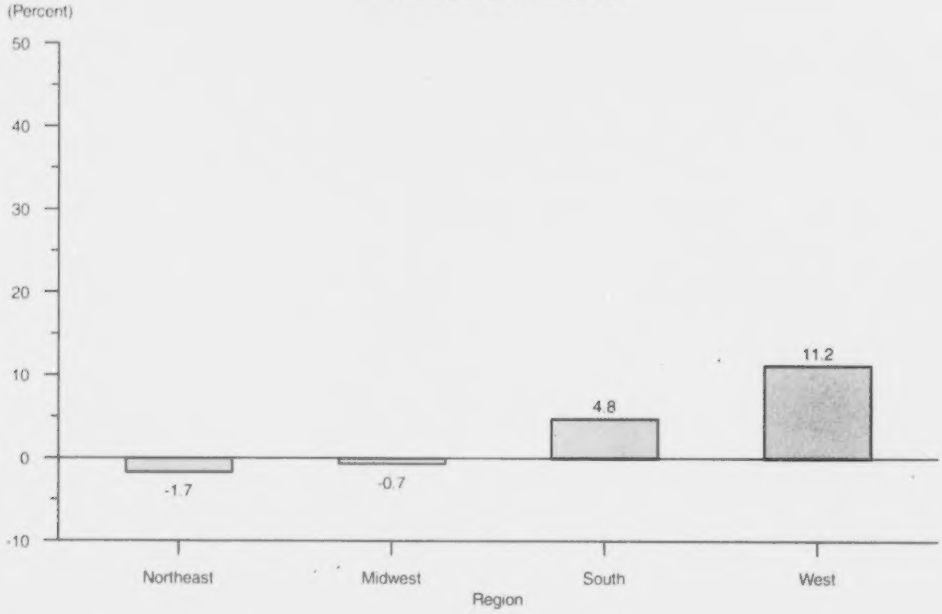

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Figure 65
Percent change in grades K-8 enrollment in public schools, by state: Fall 1997 to fall 2009

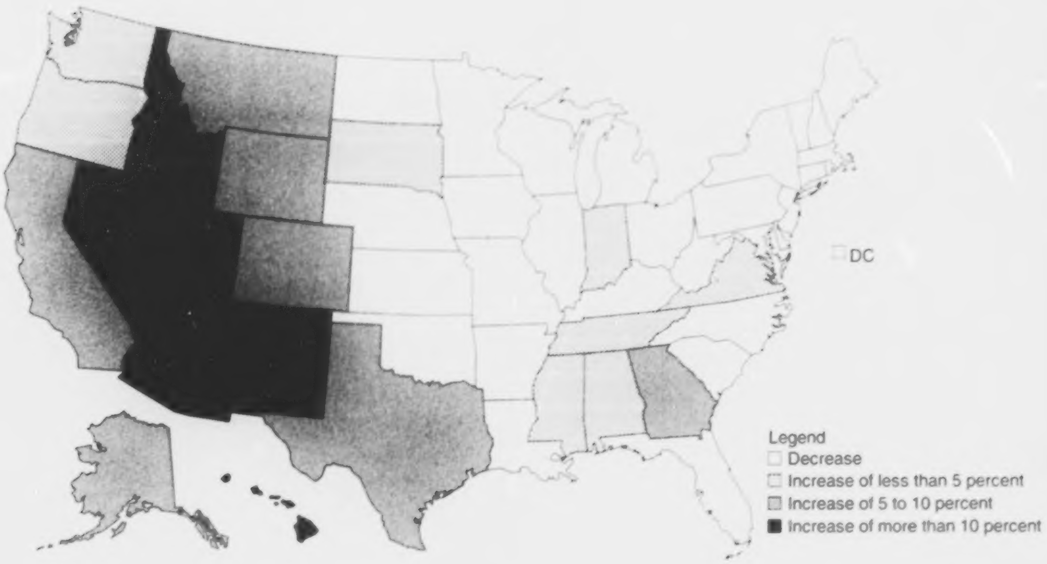
DC
Legend
☐ Decrease
☐ Increase of less than 5 percent
▨ Increase of 5 to 10 percent
■ Increase of more than 10 percent

Figure 66
Percent change in public K-8 enrollment, by region: Fall 1997 to fall 2009

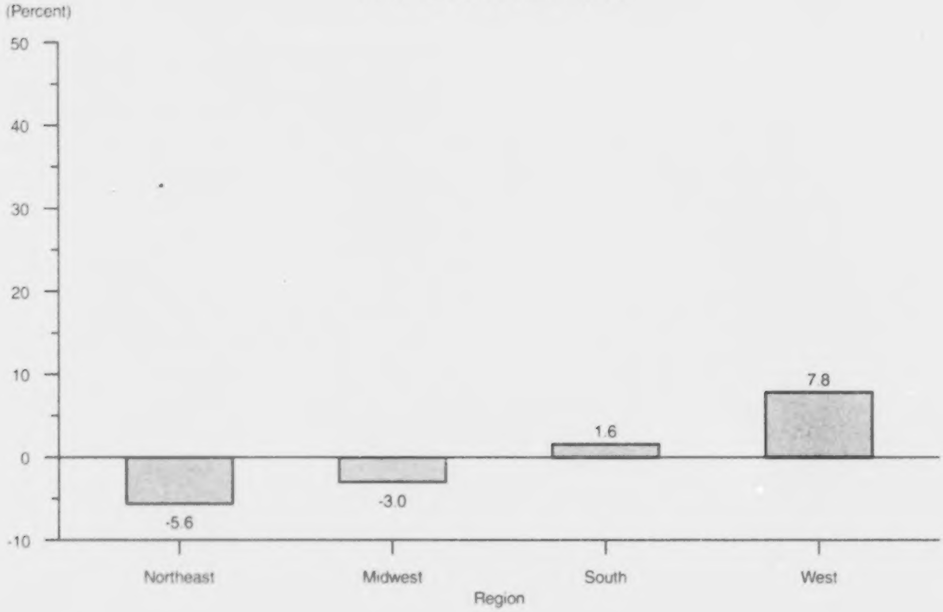

Figure 67
Percent change in grades 9-12 enrollment in public schools, by state: Fall 1997 to fall 2009

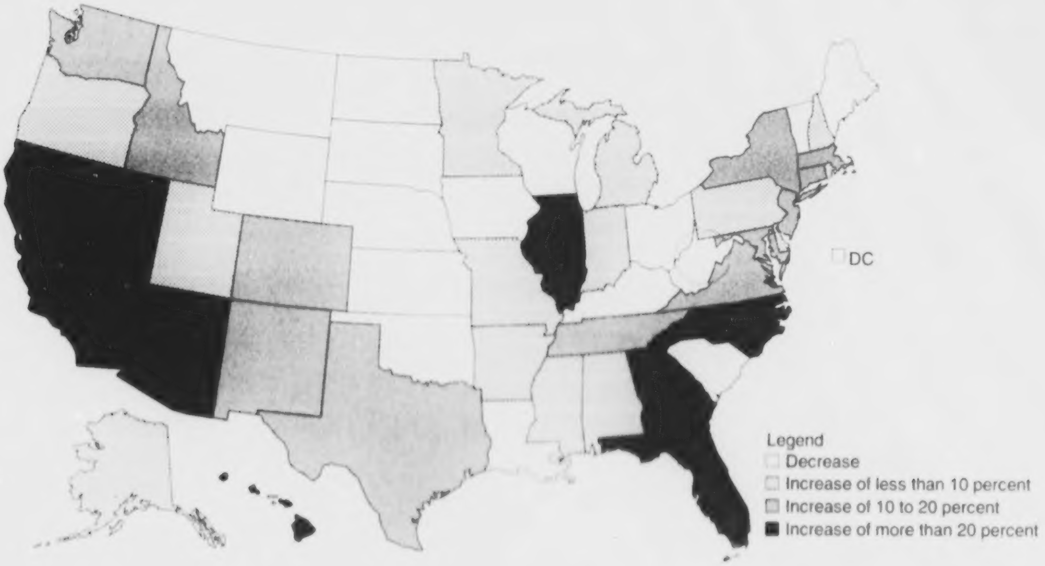
DC
Legend
Decrease
Increase of less than 10 percent
Increase of 10 to 20 percent
Increase of more than 20 percent

Figure 68
Percent change in public 9-12 enrollment, by region: Fall 1997 to fall 2009

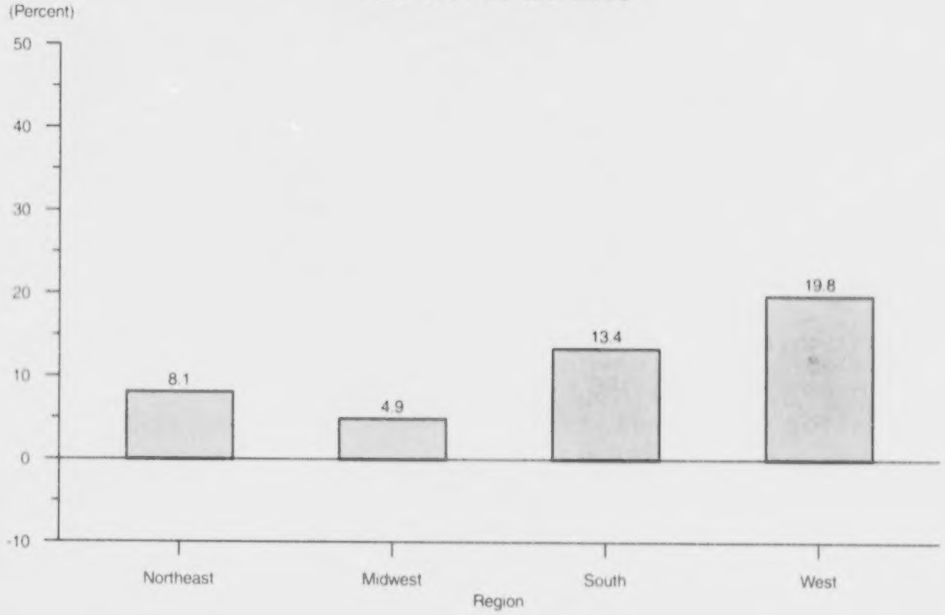

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Table 45.—Enrollment in grades K–12 in public elementary and secondary schools, by region and state, with projections: Fall 1991 to fall 2009

(In thousands)

Region and state	Actual						Projected			
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
United States	42,047	42,823	43,465	44,111	44,840	45,592	46,323	46,844	47,244	47,533
Northeast	7,407	7,526	7,654	7,760	7,894	7,986	8,095	8,164	8,207	8,232
Connecticut	481	488	496	507	518	527	537	543	547	549
Maine	216	216	217	213	214	214	213	211	209	207
Massachusetts	846	860	878	894	915	934	950	960	967	972
New Hampshire	177	181	185	189	194	198	200	202	203	203
New Jersey	1,110	1,131	1,151	1,174	1,197	1,208	1,230	1,242	1,252	1,261
New York	2,644	2,690	2,734	2,766	2,813	2,843	2,888	2,916	2,936	2,947
Pennsylvania	1,693	1,718	1,744	1,765	1,788	1,804	1,819	1,830	1,833	1,834
Rhode Island	142	144	146	147	150	151	152	153	153	152
Vermont	97	99	103	105	106	106	107	107	106	105
Midwest	10,080	10,198	10,289	10,386	10,512	10,636	10,753	10,807	10,842	10,864
Illinois	1,848	1,874	1,893	1,916	1,944	1,973	2,074	2,113	2,154	2,188
Indiana	957	961	966	969	977	983	991	996	1,001	1,005
Iowa	491	495	499	500	502	503	504	501	497	493
Kansas	445	452	458	461	463	466	468	469	469	468
Michigan	1,594	1,604	1,599	1,615	1,641	1,684	1,677	1,680	1,680	1,681
Minnesota	774	794	810	822	835	847	852	854	854	853
Missouri	843	859	866	879	890	900	908	911	913	916
Nebraska	280	282	285	287	290	292	292	292	291	290
North Dakota	118	119	119	119	119	120	119	118	117	116
Ohio	1,784	1,795	1,807	1,814	1,836	1,844	1,845	1,844	1,839	1,831
South Dakota	132	135	143	143	145	143	143	143	143	142
Wisconsin	815	829	844	861	870	879	882	884	884	883
South	15,081	15,357	15,591	15,851	16,118	16,374	16,623	16,834	17,002	17,124
Alabama	722	732	734	737	746	748	748	752	754	756
Arkansas	439	441	444	448	453	457	461	461	463	464
Delaware	102	104	106	107	108	111	112	113	114	114
District of Columbia	81	81	81	80	80	79	78	78	76	74
Florida	1,932	1,981	2,041	2,111	2,176	2,242	2,297	2,344	2,381	2,405
Georgia	1,178	1,207	1,235	1,271	1,311	1,347	1,370	1,400	1,425	1,448
Kentucky	646	655	655	658	660	656	655	655	655	654
Louisiana	794	798	801	798	797	793	789	789	785	780
Maryland	736	752	773	791	806	819	829	839	845	851
Mississippi	504	507	506	506	506	504	506	508	509	510
North Carolina	1,098	1,114	1,133	1,157	1,183	1,210	1,261	1,290	1,317	1,339
Oklahoma	588	597	604	610	616	621	623	622	619	614
South Carolina	627	640	644	649	646	653	653	652	650	647
Tennessee	834	855	867	881	894	905	918	932	944	954
Texas	3,464	3,542	3,608	3,677	3,748	3,829	3,910	3,977	4,036	4,080
Virginia	1,016	1,032	1,045	1,061	1,080	1,096	1,110	1,122	1,132	1,141
West Virginia	320	318	314	311	307	304	303	300	297	294
West	9,479	9,742	9,931	10,114	10,316	10,596	10,852	11,039	11,193	11,313
Alaska	119	122	126	127	128	130	131	132	133	133
Arizona	657	673	709	737	744	799	834	863	892	915
California	5,107	5,255	5,327	5,407	5,536	5,688	5,846	5,943	6,022	6,082
Colorado	593	613	625	641	656	673	685	697	706	713
Hawaii	175	177	180	184	187	188	193	197	201	203
Idaho	226	232	237	240	243	245	248	252	256	259
Montana	156	160	163	164	166	165	164	165	165	164
Nevada	212	223	236	251	265	282	298	312	325	338
New Mexico	309	316	322	327	330	333	338	344	348	351
Oregon	499	510	517	522	528	538	543	549	553	555
Utah	456	464	471	475	477	482	483	486	488	491
Washington	869	896	916	938	957	975	990	1,001	1,008	1,014
Wyoming	102	100	101	100	100	99	98	97	96	95

Table 45.—Enrollment in grades K–12 in public elementary and secondary schools, by region and state, with projections: Fall 1991 to fall 2009—Continued

(In thousands)

Region and state	Projected								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
United States	47,785	48,010	48,154	48,286	48,392	48,418	48,362	48,255	48,126
Northeast	8,257	8,271	8,267	8,249	8,218	8,167	8,101	8,029	7,959
Connecticut	551	550	548	545	541	536	529	523	519
Maine	206	204	202	199	198	196	195	194	193
Massachusetts	979	981	981	979	974	967	957	947	938
New Hampshire	203	204	203	203	202	201	200	199	199
New Jersey	1,269	1,274	1,278	1,279	1,279	1,276	1,269	1,262	1,253
New York	2,958	2,966	2,969	2,968	2,961	2,944	2,919	2,891	2,860
Pennsylvania	1,835	1,836	1,831	1,821	1,811	1,797	1,782	1,767	1,753
Rhode Island	152	152	151	151	149	148	147	146	145
Vermont	105	104	104	103	102	102	101	101	100
Midwest	10,885	10,897	10,879	10,867	10,852	10,825	10,781	10,724	10,681
Illinois	2,213	2,232	2,236	2,245	2,251	2,248	2,241	2,229	2,215
Indiana	1,010	1,016	1,021	1,026	1,029	1,030	1,028	1,025	1,022
Iowa	490	487	484	482	481	479	477	475	473
Kansas	466	465	463	462	462	462	462	462	464
Michigan	1,683	1,683	1,678	1,673	1,665	1,656	1,643	1,627	1,617
Minnesota	852	850	846	843	840	837	834	830	829
Missouri	916	917	916	915	914	913	910	906	902
Nebraska	289	288	287	287	287	287	287	287	288
North Dakota	114	113	112	111	111	110	109	109	110
Ohio	1,827	1,824	1,817	1,810	1,802	1,793	1,782	1,770	1,760
South Dakota	142	141	141	141	141	142	143	143	144
Wisconsin	882	880	876	873	869	867	863	860	859
South	17,214	17,302	17,369	17,428	17,478	17,501	17,489	17,465	17,421
Alabama	759	761	764	766	768	769	768	766	763
Arkansas	464	464	465	465	465	465	463	461	458
Delaware	114	114	114	114	114	114	114	113	113
District of Columbia	74	73	73	72	72	71	71	70	70
Florida	2,419	2,430	2,435	2,440	2,441	2,435	2,424	2,411	2,396
Georgia	1,467	1,485	1,501	1,516	1,527	1,535	1,539	1,540	1,541
Kentucky	652	652	651	652	651	649	646	643	639
Louisiana	774	769	764	760	757	756	754	752	751
Maryland	856	859	861	863	862	860	856	852	849
Mississippi	510	510	511	513	514	514	513	511	509
North Carolina	1,356	1,371	1,381	1,388	1,390	1,386	1,378	1,366	1,354
Oklahoma	610	606	602	598	596	593	591	589	587
South Carolina	646	644	642	637	635	631	626	625	621
Tennessee	962	970	976	982	987	990	990	989	986
Texas	4,112	4,147	4,179	4,213	4,248	4,281	4,309	4,336	4,352
Virginia	1,149	1,154	1,157	1,160	1,162	1,162	1,159	1,154	1,150
West Virginia	293	292	292	291	290	289	287	285	283
West	11,428	11,539	11,640	11,742	11,844	11,925	11,992	12,037	12,064
Alaska	134	135	135	136	137	138	139	140	142
Arizona	934	952	968	982	995	1,003	1,010	1,012	1,011
California	6,145	6,203	6,254	6,306	6,357	6,395	6,426	6,446	6,450
Colorado	718	724	729	733	738	742	745	748	750
Hawaii	206	208	211	214	217	220	222	225	227
Idaho	262	265	270	275	280	284	289	293	297
Montana	164	164	163	164	164	165	166	167	169
Nevada	348	357	365	372	378	382	384	384	383
New Mexico	355	358	362	367	371	376	381	386	390
Oregon	557	559	561	562	564	565	566	566	567
Utah	493	496	501	506	512	518	524	529	534
Washington	1,019	1,024	1,027	1,031	1,036	1,040	1,042	1,043	1,045
Wyoming	95	94	94	94	95	96	97	99	100

NOTE: Historical numbers may differ from those in previous editions. Includes most kindergarten and some nursery school enrollment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and State Public Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

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Table 46.—Percent change in grades K–12 enrollment in public schools, by region and state, with projections: Fall 1991 to fall 2009

Region and state	Actual	Projected		
	1991 to 1997	1997 to 2003	2003 to 2009	1997 to 2009
United States	10.2	4.0	-0.1	3.9
Northeast	9.3	2.1	-3.7	-1.7
Connecticut	11.6	2.2	-5.4	-3.4
Maine	-1.7	-5.2	-4.2	-9.1
Massachusetts	12.3	3.3	-4.4	-1.3
New Hampshire	13.0	1.6	-2.2	-0.6
New Jersey	10.8	3.9	-1.9	1.9
New York	9.2	2.8	-3.7	-1.0
Pennsylvania	7.5	0.6	-4.2	-3.7
Rhode Island	6.6	-0.1	-4.3	-4.4
Vermont	9.6	-2.6	-3.3	-5.8
Midwest	6.7	1.2	-1.8	-0.7
Illinois	12.2	7.8	-1.0	6.8
Indiana	3.5	3.1	0.1	3.2
Iowa	2.6	-4.0	-2.3	-6.2
Kansas	5.0	-0.9	0.1	-0.8
Michigan	5.3	0.0	-3.7	-3.6
Minnesota	10.1	-0.6	-2.1	-2.7
Missouri	7.7	0.9	-1.5	-0.6
Nebraska	4.4	-1.6	0.1	-1.5
North Dakota	0.5	-5.7	-2.2	-7.8
Ohio	3.4	-1.5	-3.2	-4.6
South Dakota	8.5	-1.1	2.1	1.0
Wisconsin	8.3	-0.6	-1.9	-2.6
South	10.2	4.5	0.3	4.8
Alabama	3.6	2.1	-0.1	2.0
Arkansas	5.1	0.8	-1.4	-0.6
Delaware	9.4	2.4	-1.4	0.9
District of Columbia	-2.8	-7.0	-3.5	-10.2
Florida	18.9	6.0	-1.6	4.3
Georgia	16.4	9.5	2.6	12.4
Kentucky	1.4	-0.5	-2.0	-2.5
Louisiana	-0.6	-3.2	-1.7	-4.9
Maryland	12.6	3.9	-1.4	2.5
Mississippi	0.3	1.1	-0.5	0.6
North Carolina	14.9	9.5	-2.0	7.3
Oklahoma	5.9	-3.4	-2.5	-5.8
South Carolina	4.1	-1.7	-3.3	-4.9
Tennessee	10.1	6.4	1.0	7.5
Texas	12.9	6.9	4.1	11.3
Virginia	9.2	4.3	-0.6	3.7
West Virginia	-5.4	-3.7	-3.0	-6.6
West	14.5	7.3	3.6	11.2
Alaska	10.2	3.3	5.2	8.7
Arizona	26.9	16.1	4.4	21.2
California	14.5	7.0	3.1	10.3
Colorado	15.6	6.4	2.8	9.4
Hawaii	10.3	9.6	7.4	17.6
Idaho	9.8	8.7	10.2	19.8
Montana	5.5	-0.5	3.1	2.6
Nevada	40.7	22.5	4.8	28.4
New Mexico	9.6	7.0	7.8	15.3
Oregon	9.0	3.2	1.1	4.4
Utah	5.8	3.7	6.7	10.6
Washington	13.9	3.7	1.7	5.5
Wyoming	-4.2	-4.0	7.1	2.7

NOTE: Calculations are based on unrounded numbers. Includes most kindergarten and some nursery school enrollment.

SOURCE: US Department of Education, National Center for Education Statistics, Common Core of Data surveys and State Public Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

Table 47.—Enrollment in grades K–8 in public schools, by region and state, with projections: Fall 1991 to fall 2009

(In thousands)

Region and state	Actual						Projected			
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
United States	30,506	31,088	31,504	31,898	32,341	32,759	33,185	33,514	33,701	33,875
Northeast	5,293	5,387	5,486	5,568	5,659	5,711	5,774	5,805	5,808	5,804
Connecticut	355	362	369	376	384	389	395	396	396	394
Maine	157	156	157	156	156	156	154	151	148	145
Massachusetts	616	630	646	659	675	688	697	700	700	699
New Hampshire	130	133	136	139	142	144	144	144	143	142
New Jersey	801	818	844	862	880	884	901	910	916	922
New York	1,862	1,893	1,921	1,949	1,980	2,000	2,032	2,047	2,054	2,060
Pennsylvania	1,195	1,216	1,233	1,244	1,257	1,264	1,268	1,273	1,269	1,263
Rhode Island	104	106	107	108	110	110	110	110	110	109
Vermont	73	74	75	76	75	76	75	74	73	72
Midwest	7,245	7,312	7,348	7,387	7,448	7,513	7,564	7,592	7,579	7,580
Illinois	1,328	1,345	1,356	1,368	1,390	1,412	1,481	1,505	1,514	1,528
Indiana	676	677	679	679	684	690	695	703	709	716
Iowa	348	349	348	346	344	342	340	338	334	332
Kansas	325	328	330	329	329	328	326	326	324	324
Michigan	1,159	1,165	1,160	1,170	1,192	1,222	1,213	1,214	1,208	1,205
Minnesota	557	569	577	581	586	589	587	585	581	578
Missouri	612	622	622	628	636	643	646	647	645	644
Nebraska	201	202	203	203	203	203	201	200	199	199
North Dakota	85	85	84	83	82	82	80	79	78	77
Ohio	1,277	1,284	1,290	1,295	1,297	1,299	1,295	1,297	1,291	1,288
South Dakota	96	98	102	102	101	99	98	98	97	97
Wisconsin	580	588	596	601	603	605	602	602	597	594
South	11,068	11,287	11,440	11,604	11,772	11,912	12,062	12,209	12,311	12,404
Alabama	526	535	536	535	539	540	540	546	551	556
Arkansas	315	318	318	319	322	324	326	326	327	329
Delaware	75	76	77	77	77	78	78	79	79	79
District of Columbia	61	61	61	62	62	61	61	60	59	58
Florida	1,428	1,470	1,515	1,570	1,614	1,653	1,681	1,701	1,715	1,725
Georgia	868	892	910	935	966	991	1,004	1,026	1,046	1,065
Kentucky	466	470	467	467	468	466	465	467	468	470
Louisiana	591	591	587	584	580	575	570	571	567	563
Maryland	543	556	569	581	590	597	600	607	610	613
Mississippi	370	370	369	367	366	364	365	369	371	374
North Carolina	795	811	828	847	871	886	927	946	961	974
Oklahoma	432	439	441	443	446	445	443	440	436	433
South Carolina	456	467	467	469	463	468	467	466	463	461
Tennessee	605	622	630	641	651	658	667	680	688	697
Texas	2,575	2,634	2,681	2,721	2,757	2,800	2,854	2,903	2,942	2,976
Virginia	741	758	767	774	788	796	806	814	819	826
West Virginia	222	219	216	213	211	209	208	208	207	206
West	6,900	7,102	7,230	7,340	7,462	7,622	7,785	7,907	8,002	8,086
Alaska	89	92	94	94	93	94	94	95	95	95
Arizona	490	498	526	543	549	588	611	630	648	663
California	3,720	3,851	3,903	3,956	4,041	4,131	4,245	4,310	4,358	4,396
Colorado	436	451	460	470	479	487	491	498	502	507
Hawaii	127	129	132	134	136	136	139	142	145	147
Idaho	161	165	167	169	170	169	171	175	178	183
Montana	113	115	117	117	116	115	113	114	113	112
Nevada	158	165	175	185	196	208	219	228	237	244
New Mexico	213	217	226	229	229	230	231	236	238	242
Oregon	359	365	368	372	376	380	382	384	386	387
Utah	327	330	330	328	328	328	329	333	337	342
Washington	633	652	660	673	680	687	694	698	700	704
Wyoming	74	72	71	70	69	67	66	65	64	64

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Table 47.—Enrollment in grades K–8 in public schools, by region and state, with projections: Fall 1991 to fall 2009—Continued

(In thousands)

Region and state	Projected								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
United States	34,018	34,075	34,035	33,910	33,723	33,550	33,455	33,421	33,427
Northeast	5,801	5,775	5,731	5,673	5,610	5,551	5,510	5,480	5,450
Connecticut	392	388	383	377	372	368	365	362	360
Maine	144	143	142	140	140	139	139	140	141
Massachusetts	698	695	688	679	672	665	660	657	653
New Hampshire	141	141	140	139	139	139	139	139	140
New Jersey	925	925	920	913	904	896	890	886	881
New York	2,062	2,055	2,041	2,020	1,991	1,965	1,946	1,931	1,917
Pennsylvania	1,259	1,251	1,241	1,229	1,218	1,207	1,198	1,192	1,185
Rhode Island	108	107	106	105	105	103	103	103	103
Vermont	72	71	71	70	70	70	70	70	70
Midwest	7,586	7,575	7,542	7,488	7,447	7,403	7,374	7,355	7,336
Illinois	1,535	1,536	1,532	1,521	1,507	1,494	1,482	1,473	1,464
Indiana	723	725	725	723	721	717	713	710	707
Iowa	331	331	329	327	325	324	323	323	322
Kansas	323	323	323	322	323	323	323	323	324
Michigan	1,204	1,200	1,191	1,176	1,166	1,157	1,152	1,149	1,144
Minnesota	577	574	570	565	564	562	562	563	564
Missouri	645	645	642	638	634	631	629	629	629
Nebraska	199	199	199	198	199	199	199	200	200
North Dakota	76	76	75	75	75	75	75	76	76
Ohio	1,285	1,280	1,272	1,262	1,252	1,242	1,234	1,229	1,223
South Dakota	97	98	98	98	99	100	100	101	101
Wisconsin	592	590	587	583	582	581	580	580	581
South	12,463	12,499	12,495	12,470	12,411	12,348	12,299	12,266	12,250
Alabama	559	563	564	562	561	557	553	550	547
Arkansas	330	331	330	328	326	324	323	321	319
Delaware	79	79	79	79	79	78	78	77	77
District of Columbia	58	57	56	55	54	53	53	54	55
Florida	1,728	1,725	1,715	1,700	1,681	1,667	1,656	1,649	1,648
Georgia	1,077	1,087	1,091	1,092	1,092	1,090	1,087	1,084	1,082
Kentucky	471	472	470	468	465	461	457	454	450
Louisiana	560	558	557	554	552	549	546	545	544
Maryland	614	614	611	607	603	600	598	596	595
Mississippi	377	378	379	378	377	374	371	368	365
North Carolina	980	982	977	968	956	945	936	928	921
Oklahoma	430	428	425	421	418	415	414	414	415
South Carolina	460	457	452	453	449	445	442	441	440
Tennessee	703	708	709	709	707	703	700	697	694
Texas	2,998	3,022	3,043	3,061	3,064	3,065	3,067	3,074	3,090
Virginia	831	834	833	829	824	820	817	813	809
West Virginia	206	207	206	205	203	202	200	199	197
West	8,167	8,226	8,268	8,278	8,255	8,248	8,272	8,320	8,391
Alaska	95	96	96	97	98	99	100	102	103
Arizona	674	682	687	688	685	683	682	681	682
California	4,439	4,464	4,480	4,477	4,443	4,429	4,441	4,473	4,525
Colorado	510	514	517	518	519	519	520	522	523
Hawaii	149	152	153	155	156	157	158	160	161
Idaho	186	190	193	197	200	202	203	205	207
Montana	113	113	114	115	116	116	117	118	119
Nevada	250	253	255	255	254	253	252	251	249
New Mexico	244	248	251	255	258	260	262	264	267
Oregon	389	390	389	388	388	388	389	390	392
Utah	346	350	354	357	361	364	366	369	371
Washington	707	710	711	710	709	709	711	715	718
Wyoming	64	65	66	67	68	69	70	71	72

NOTE: Historical numbers may differ from those in previous editions. Includes most kindergarten and some nursery school enrollment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data Surveys and State Public Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

Table 48.—Percent change in grades K–8 enrollment in public schools, by region and state, with projections: Fall 1991 to fall 2009

Region and state	Actual	Projected		
	1991 to 1997	1997 to 2003	2003 to 2009	1997 to 2009
United States	8.8	2.6	-1.8	0.7
Northeast	9.1	-0.8	-4.9	-5.6
Connecticut	11.0	-3.0	-5.8	-8.6
Maine	-1.8	-8.0	-0.6	-8.6
Massachusetts	13.2	-1.3	-5.0	-6.3
New Hampshire	10.7	-2.7	0.1	-2.6
New Jersey	12.5	2.2	-4.3	-2.2
New York	9.1	0.4	-6.1	-5.7
Pennsylvania	6.1	-2.1	-4.5	-6.5
Rhode Island	5.5	-3.4	-3.4	-6.6
Vermont	2.5	-5.1	-0.7	-5.8
Midwest	4.4	-0.3	-2.7	-3.0
Illinois	11.5	3.4	-4.4	-1.1
Indiana	2.7	4.3	-2.5	1.7
Iowa	-2.3	-3.3	-1.9	-5.2
Kansas	0.2	-0.9	0.3	-0.6
Michigan	4.7	-1.8	-3.9	-5.7
Minnesota	5.4	-2.9	-1.1	-3.9
Missouri	5.6	-0.6	-2.0	-2.6
Nebraska	-0.2	-1.1	0.7	-0.4
North Dakota	-5.7	-6.0	0.7	-5.4
Ohio	1.4	-1.8	-3.8	-5.5
South Dakota	1.4	0.2	3.5	3.7
Wisconsin	3.8	-2.5	-1.0	-3.5
South	9.0	3.6	-2.0	1.6
Alabama	2.6	4.3	-3.0	1.2
Arkansas	3.4	1.3	-3.4	-2.1
Delaware	5.0	1.3	-2.9	-1.7
District of Columbia	0.3	-9.0	-1.7	-10.6
Florida	17.8	2.0	-3.9	-2.0
Georgia	15.6	8.7	-0.8	7.8
Kentucky	-0.3	1.2	-4.3	-3.2
Louisiana	-3.6	-2.3	-2.2	-4.4
Maryland	10.5	1.8	-2.6	-0.9
Mississippi	-1.4	3.8	-3.6	0.0
North Carolina	16.7	5.3	-5.6	-0.6
Oklahoma	2.4	-4.1	-2.2	-6.2
South Carolina	2.4	-3.2	-2.7	-5.8
Tennessee	10.4	6.2	-2.0	4.1
Texas	10.8	6.6	1.6	8.3
Virginia	8.7	3.4	-2.8	0.4
West Virginia	-6.1	-0.9	-4.3	-5.2
West	12.8	6.2	1.5	7.8
Alaska	5.7	2.0	7.5	9.6
Arizona	24.6	12.5	-0.8	11.6
California	14.1	5.5	1.0	6.6
Colorado	12.8	5.2	1.2	6.5
Hawaii	9.8	10.1	5.2	15.8
Idaho	5.8	13.1	6.9	20.9
Montana	0.6	0.5	4.6	5.1
Nevada	38.8	16.7	-2.3	14.0
New Mexico	8.5	8.8	6.4	15.7
Oregon	6.2	2.0	0.6	2.6
Utah	0.6	7.6	4.9	12.9
Washington	9.7	2.5	1.0	3.5
Wyoming	-11.0	-0.4	10.4	10.0

NOTE: Calculations are based on unrounded numbers. Includes most kindergarten and some nursery school enrollment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and State Public Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

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Table 49.—Enrollment in grades 9–12 in public schools, by region and state, with projections: Fall 1991 to fall 2009

(In thousands)

Region and state	Actual						Projected			
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
United States	11,541	11,735	11,961	12,213	12,500	12,834	13,137	13,330	13,543	13,658
Northeast	2,114	2,139	2,168	2,192	2,235	2,275	2,320	2,359	2,399	2,428
Connecticut	126	127	128	131	134	138	142	147	152	155
Maine	60	60	60	57	58	58	59	60	61	62
Massachusetts	230	230	232	235	240	246	253	260	268	274
New Hampshire	47	48	49	50	52	54	57	58	60	61
New Jersey	309	313	308	312	317	324	329	332	337	340
New York	782	796	813	817	833	843	855	870	882	887
Pennsylvania	498	502	511	521	531	541	552	557	564	572
Rhode Island	38	38	39	40	40	41	42	43	43	44
Vermont	24	25	28	29	30	30	32	33	33	34
Midwest	2,835	2,886	2,941	2,999	3,064	3,123	3,189	3,215	3,262	3,284
Illinois	520	529	537	548	553	561	593	609	640	660
Indiana	281	283	287	290	293	294	296	294	292	289
Iowa	143	146	151	155	158	161	164	163	163	161
Kansas	120	123	128	132	134	138	142	143	144	144
Michigan	435	439	439	445	450	463	464	467	473	476
Minnesota	217	224	233	240	249	258	265	269	273	275
Missouri	231	238	244	250	254	257	262	264	268	271
Nebraska	78	80	82	84	87	89	91	92	91	91
North Dakota	33	34	35	36	37	38	39	39	39	39
Ohio	506	511	517	519	539	546	549	547	547	543
South Dakota	35	37	41	42	43	44	45	45	45	45
Wisconsin	235	241	248	259	267	274	280	283	287	289
South	4,013	4,070	4,150	4,247	4,346	4,462	4,561	4,625	4,691	4,720
Alabama	196	196	199	201	207	208	208	205	203	200
Arkansas	123	124	127	128	131	133	135	135	135	135
Delaware	28	28	29	30	31	33	34	34	34	35
District of Columbia	20	20	19	18	18	18	17	17	17	17
Florida	505	512	526	542	563	589	616	643	667	680
Georgia	309	316	325	336	345	356	367	373	379	384
Kentucky	180	185	188	191	192	190	190	188	187	183
Louisiana	203	207	213	214	217	218	220	218	218	217
Maryland	193	196	203	210	215	222	228	232	236	238
Mississippi	134	137	137	139	140	140	141	139	138	135
North Carolina	303	304	305	309	312	324	334	344	356	365
Oklahoma	156	158	163	167	171	175	180	182	183	181
South Carolina	171	173	177	180	182	185	186	186	187	186
Tennessee	229	233	237	241	243	248	251	253	256	257
Texas	889	907	927	957	991	1,029	1,057	1,074	1,093	1,104
Virginia	275	274	278	286	292	300	304	308	313	315
West Virginia	99	99	99	98	96	95	95	92	90	88
West	2,579	2,640	2,701	2,775	2,854	2,974	3,066	3,132	3,191	3,227
Alaska	30	31	32	33	34	36	37	37	38	38
Arizona	167	176	183	195	195	211	223	233	243	253
California	1,387	1,404	1,424	1,452	1,495	1,557	1,601	1,634	1,664	1,685
Colorado	157	161	165	171	177	186	194	199	203	206
Hawaii	48	49	49	50	52	51	53	55	56	56
Idaho	64	67	70	72	74	76	77	78	78	76
Montana	43	45	46	48	49	50	51	51	52	51
Nevada	54	58	61	65	69	74	79	84	89	93
New Mexico	96	98	96	98	100	103	107	109	110	110
Oregon	139	145	148	150	152	158	162	165	167	168
Utah	129	134	141	146	149	154	154	153	151	148
Washington	237	245	256	265	277	287	296	303	308	310
Wyoming	28	29	29	30	31	32	32	32	32	31

Table 49.—Enrollment in grades 9–12 in public schools, by region and state, with projections: Fall 1991 to fall 2009—Continued

(In thousands)

Region and state	Projected								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
United States	13,767	13,935	14,119	14,376	14,669	14,868	14,907	14,833	14,699
Northeast	2,456	2,496	2,536	2,575	2,607	2,616	2,591	2,549	2,509
Connecticut	159	162	166	168	169	168	165	161	158
Maine	61	61	60	59	58	57	56	54	52
Massachusetts	280	287	293	300	303	302	297	290	284
New Hampshire	62	63	64	64	63	63	61	60	59
New Jersey	343	350	357	366	375	380	379	376	372
New York	895	911	929	948	970	979	973	960	943
Pennsylvania	577	585	590	593	593	591	584	575	568
Rhode Island	44	45	45	45	45	45	44	43	42
Vermont	33	33	33	33	32	32	31	30	30
Midwest	3,299	3,322	3,337	3,379	3,405	3,422	3,407	3,368	3,345
Illinois	678	697	705	724	744	755	759	757	750
Indiana	288	291	296	303	308	313	315	315	315
Iowa	159	157	155	155	155	156	154	152	151
Kansas	143	142	140	140	139	139	139	139	140
Michigan	480	483	487	498	499	499	491	478	472
Minnesota	276	276	276	277	277	275	272	267	265
Missouri	272	272	274	277	280	282	281	277	273
Nebraska	90	89	88	89	88	88	88	87	87
North Dakota	38	37	37	36	35	35	34	34	34
Ohio	542	544	545	549	550	552	548	541	536
South Dakota	44	44	43	43	42	42	42	42	43
Wisconsin	291	291	289	289	287	286	283	280	279
South	4,751	4,802	4,874	4,959	5,067	5,153	5,190	5,199	5,171
Alabama	199	198	200	204	207	212	215	215	216
Arkansas	134	134	134	137	139	141	141	140	139
Delaware	35	35	35	35	36	36	36	36	36
District of Columbia	17	17	17	18	18	18	17	17	16
Florida	691	705	720	740	761	768	768	762	748
Georgia	390	398	410	424	435	446	452	456	458
Kentucky	181	180	181	183	186	188	189	189	189
Louisiana	214	211	207	205	204	207	207	207	207
Maryland	242	245	250	255	258	260	259	256	254
Mississippi	133	132	133	134	136	140	142	143	144
North Carolina	375	389	404	420	434	442	442	438	432
Oklahoma	179	178	177	177	178	178	177	174	171
South Carolina	186	187	190	184	187	186	183	184	181
Tennessee	258	262	268	274	281	287	290	292	292
Texas	1,114	1,125	1,137	1,152	1,184	1,216	1,242	1,262	1,262
Virginia	318	320	325	331	337	342	342	341	341
West Virginia	87	86	86	86	86	87	87	87	86
West	3,261	3,314	3,373	3,464	3,589	3,677	3,720	3,717	3,674
Alaska	39	39	39	39	39	39	39	39	39
Arizona	260	271	281	294	309	320	328	331	329
California	1,706	1,739	1,774	1,829	1,915	1,966	1,985	1,973	1,926
Colorado	208	210	212	215	219	223	225	226	227
Hawaii	56	57	58	59	61	63	64	65	65
Idaho	76	76	76	78	80	82	85	88	90
Montana	51	50	49	49	48	49	49	49	49
Nevada	98	104	110	117	124	129	132	133	133
New Mexico	110	110	111	112	113	116	119	121	123
Oregon	168	169	171	174	176	177	177	176	175
Utah	146	146	147	149	151	154	158	161	163
Washington	311	313	316	322	327	331	331	328	326
Wyoming	30	29	28	28	27	27	27	28	28

NOTE: Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data Surveys and State Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

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Table 50.—Percent change in grades 9–12 enrollment in public schools, by region and state, with projections: Fall 1991 to fall 2009

Region and state	Actual	Projected		
	1991 to 1997	1997 to 2003	2003 to 2009	1997 to 2009
United States	13.8	7.5	4.1	11.9
Northeast	9.8	9.3	-1.1	8.1
Connecticut	13.3	16.4	-4.5	11.1
Maine	-1.5	2.3	-12.7	-10.6
Massachusetts	9.8	15.9	-3.0	12.4
New Hampshire	19.4	12.5	-7.3	4.3
New Jersey	6.5	8.5	4.1	12.9
New York	9.4	8.6	1.6	10.3
Pennsylvania	10.9	6.9	-3.7	2.9
Rhode Island	9.7	8.5	-6.4	1.5
Vermont	30.8	3.1	-8.8	-5.9
Midwest	12.5	4.6	0.2	4.9
Illinois	14.0	18.8	6.4	26.5
Indiana	5.4	0.2	6.5	6.7
Iowa	14.6	-5.3	-3.1	-8.2
Kansas	17.9	-1.0	-0.3	-1.4
Michigan	6.7	4.9	-3.0	1.8
Minnesota	22.1	4.3	-4.1	0.1
Missouri	13.2	4.7	-0.4	4.3
Nebraska	16.2	-2.8	-1.1	-3.9
North Dakota	16.3	-5.1	-8.2	-12.9
Ohio	8.5	-0.8	-1.6	-2.4
South Dakota	28.0	-4.0	-0.8	-4.8
Wisconsin	19.2	3.4	-3.8	-0.5
South	13.7	6.9	6.1	13.4
Alabama	6.2	-3.6	8.0	4.1
Arkansas	9.4	-0.4	3.4	3.0
Delaware	21.5	4.9	1.9	7.0
District of Columbia	-12.6	0.3	-9.2	-8.9
Florida	22.1	16.9	3.9	21.5
Georgia	18.5	11.8	11.8	25.0
Kentucky	5.6	-4.6	4.0	-0.8
Louisiana	7.9	-5.7	-0.3	-5.9
Maryland	18.5	9.6	1.6	11.3
Mississippi	4.9	-5.8	8.3	2.0
North Carolina	10.4	21.0	6.8	29.3
Oklahoma	15.4	-1.6	-3.2	-4.7
South Carolina	8.7	1.9	-4.7	-2.8
Tennessee	9.4	6.9	9.1	16.6
Texas	18.8	7.6	11.0	19.4
Virginia	10.5	6.7	5.2	12.2
West Virginia	-3.9	-9.8	0.2	-9.6
West	18.9	10.0	8.9	19.8
Alaska	23.7	6.8	-0.4	6.5
Arizona	33.6	26.1	17.1	47.6
California	15.4	10.8	8.5	20.3
Colorado	23.3	9.3	6.8	16.8
Hawaii	11.5	8.1	13.1	22.2
Idaho	20.0	-1.0	18.3	17.2
Montana	18.3	-2.8	-0.2	-3.0
Nevada	46.4	38.3	21.5	68.1
New Mexico	12.1	3.1	11.1	14.5
Oregon	16.0	6.0	2.2	8.4
Utah	19.1	-4.8	11.2	5.9
Washington	25.3	6.7	3.2	10.1
Wyoming	13.6	-11.6	-0.6	-12.1

NOTE: Calculations are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and State Public Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

Chapter 9

Public High School Graduates

The projected increases in public high school enrollment (grades 9 through 12) between 1997 and 2009 will cause corresponding increases in the number of public high school graduates. The number of public high school graduates is expected to increase by 23 percent between 1996–97 and 2008–09. This increase will be reflected in many states, with 42 states showing increases (table 52 and figure 69). Each region of the country is expected to reflect this increase in the number of public high school graduates. Projected trends in the number of public high school graduates by state could be impacted by changes in policies affecting graduation requirements.

The number of public high school graduates in the Northeast is expected to increase 20 percent between 1996–97 and 2008–09 (table 52 and figure 70). Large increases are expected in Connecticut (28 percent), Massachusetts (29 percent), New Hampshire (22 percent), New Jersey (23 percent), New York (21 percent), Pennsylvania (12 percent), Rhode Island (13 percent), and Vermont (9 percent). Maine is projected to decrease by 3 percent.

The number of public high school graduates in the Midwest is expected to increase by 13 percent between 1996–97 and 2008–09. Increases are expected in Illinois (38 percent), Michigan (11 percent), Minnesota (11 percent), and Missouri (14 percent). Smaller increases are projected for Indiana (9 percent), Kansas (5 percent), Nebraska (4 percent), Ohio (5 percent), and Wisconsin (8 percent). Decreases are projected for Iowa (0.2 percent), North Dakota (8 percent), and South Dakota (3 percent).

Between 1996–97 and 2008–09, the number of public high school graduates in the South will increase by 24 percent. The largest increases are expected in Delaware (21 percent), Florida (45 percent), Georgia (36 percent), Maryland (25 percent), North Carolina (48 percent), Tennessee (20 percent), Texas (30 percent), and Virginia (20 percent). Other increases are projected for Alabama (4 percent), Arkansas (13 percent), Kentucky (1 percent), Mississippi (3 percent), Oklahoma (10 percent), and South Carolina (7 percent). Despite an overall increase in the region, three Southern locales are expected to have declines in the number of graduates. Decreases are expected in the District of Columbia (5 percent), Louisiana (5 percent), and West Virginia (7 percent).

The number of high school graduates in the West is expected to increase, rising by 35 percent. The largest increases are expected in Alaska (16 percent), Arizona (76 percent), California (41 percent), Colorado (31 percent), Hawaii (28 percent), Nevada (103 percent), New Mexico (20 percent), Oregon (17 percent), and Washington (25 percent). Other increases are projected in Idaho (11 percent) and Utah (3 percent). Decreases are projected for Montana (0.8 percent) and Wyoming (15 percent).

Figure 69
Percent change in number of public high school graduates, by state: 1996-97 to 2008-09

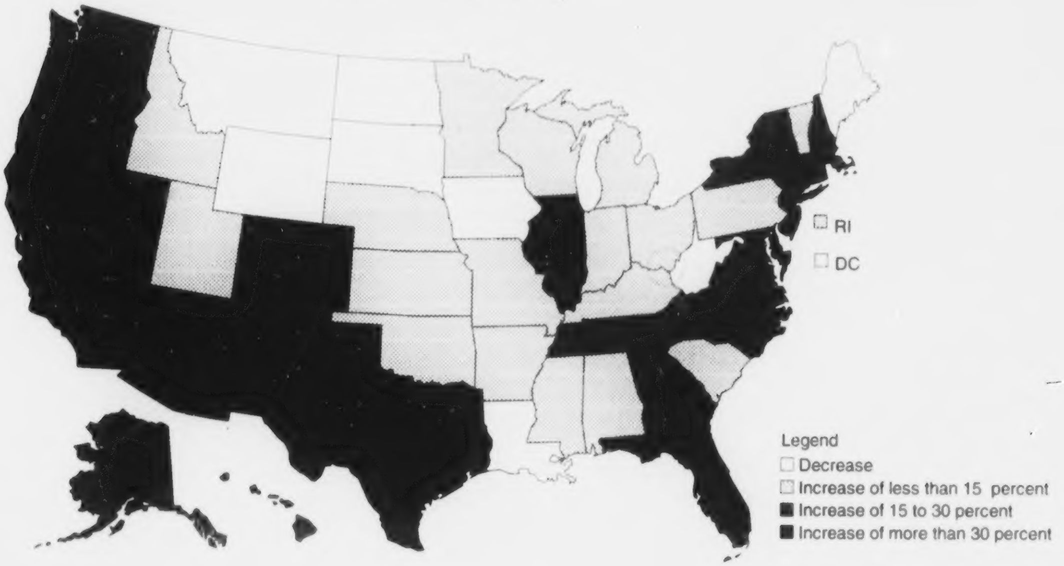
RI
DC
Legend
Decrease
Increase of less than 15 percent
Increase of 15 to 30 percent
Increase of more than 30 percent

Figure 70
Percent change in number of public high school graduates, by region: 1996-97 to 2008-09

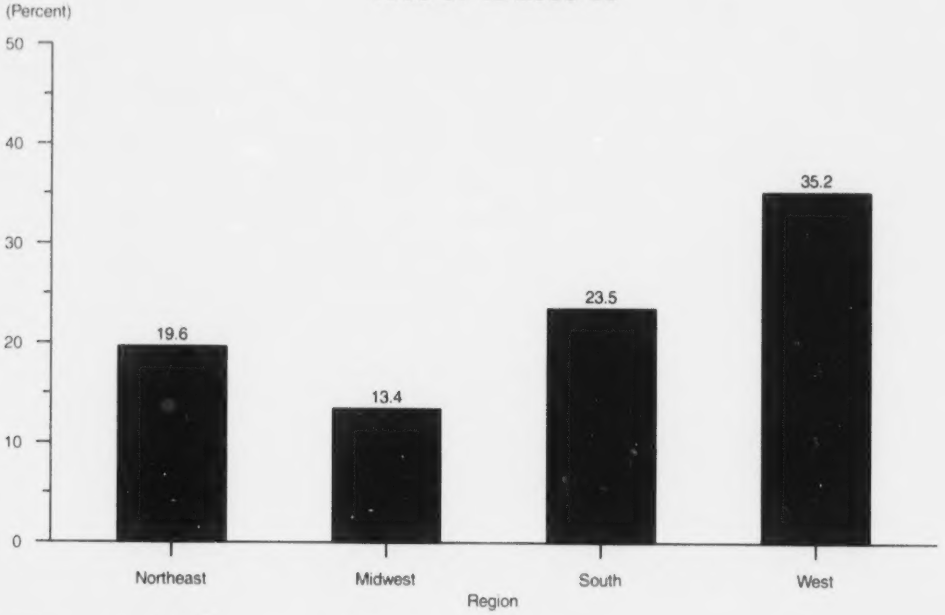

Table 51.—Number of high school graduates in public schools, by region and state, with projections: 1990–91 to 2008–09

Region and state	Actual						Projected			
	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000
United States	2,234,893	2,226,016	2,233,241	2,220,849	2,273,541	2,281,317	2,371,670	2,445,160	2,506,890	2,582,680
Northeast	419,007	419,115	413,955	408,755	413,417	418,826	427,304	432,690	442,610	457,930
Connecticut	27,290	27,079	26,799	26,330	26,445	26,319	27,017	27,890	28,900	30,390
Maine	13,151	13,177	12,103	11,384	11,501	11,795	11,717	11,550	11,830	11,650
Massachusetts	50,216	50,317	48,321	47,453	47,679	47,993	48,748	50,330	51,540	53,540
New Hampshire	10,059	10,329	10,065	9,933	10,145	10,094	10,391	10,960	11,620	12,050
New Jersey	67,003	66,669	67,134	66,125	67,403	67,516	69,106	70,780	71,290	72,930
New York	133,562	134,573	132,963	132,708	132,401	135,569	137,528	135,200	139,000	146,060
Pennsylvania	104,770	103,881	103,715	101,958	104,146	105,981	108,928	111,570	113,700	115,810
Rhode Island	7,744	7,859	7,640	7,450	7,826	7,689	7,837	8,090	8,140	8,540
Vermont	5,212	5,231	5,215	5,414	5,871	5,870	6,032	6,340	6,590	6,960
Midwest	583,888	578,106	588,810	578,914	596,753	599,869	629,420	648,590	660,480	670,940
Illinois	103,329	102,742	103,628	102,126	105,164	110,486	122,759	124,880	126,470	130,910
Indiana	57,892	56,630	57,559	54,650	56,058	56,368	56,833	58,660	58,650	58,980
Iowa	28,593	29,224	30,677	30,247	31,268	31,689	32,856	34,240	35,050	34,750
Kansas	24,414	24,129	24,720	25,319	26,125	25,786	26,694	28,170	28,950	29,490
Michigan	88,234	87,756	85,302	83,385	84,628	85,530	87,047	89,080	90,310	90,950
Minnesota	46,474	46,228	48,002	47,514	49,354	50,481	53,169	55,540	57,600	58,860
Missouri	46,928	46,556	46,864	46,566	48,862	48,870	50,469	51,760	52,160	51,960
Nebraska	16,500	17,057	17,569	17,072	17,969	18,014	18,453	19,540	20,300	20,270
North Dakota	7,573	7,438	7,310	7,522	7,817	8,027	8,137	8,410	8,750	9,010
Ohio	107,484	104,522	109,200	107,700	109,418	103,435	109,158	111,430	114,190	116,210
South Dakota	7,127	7,261	7,952	8,442	8,355	8,532	8,976	9,460	9,580	10,080
Wisconsin	49,340	48,563	50,027	48,371	51,735	52,651	54,870	57,410	58,470	59,480
South	780,268	762,751	754,670	748,079	770,737	766,404	791,179	819,320	840,990	868,720
Alabama	39,042	38,680	36,007	34,447	36,268	35,043	37,038	38,350	37,890	38,070
Arkansas	25,668	25,845	25,655	24,990	24,636	25,094	25,455	26,890	26,990	27,220
Delaware	5,223	5,325	5,492	5,230	5,234	5,609	5,777	6,050	6,470	6,500
District of Columbia	3,369	3,385	3,136	3,207	2,974	2,696	2,822	2,720	2,530	2,660
Florida	87,419	93,674	89,428	88,032	89,827	89,242	94,421	96,880	103,230	110,290
Georgia	60,088	57,742	57,602	56,356	56,660	56,271	58,506	62,350	64,400	66,210
Kentucky	35,835	33,896	36,361	38,454	37,626	36,641	36,862	37,140	37,310	37,690
Louisiana	33,489	32,247	33,682	34,822	36,480	36,467	37,142	37,730	37,730	38,090
Maryland	39,014	39,720	39,523	39,091	41,387	41,785	42,794	45,160	46,730	47,350
Mississippi	23,665	22,912	23,597	23,379	23,837	23,032	23,041	23,690	23,980	24,310
North Carolina	62,792	61,157	60,460	57,738	59,540	57,014	58,762	60,690	62,240	66,350
Oklahoma	33,007	32,670	30,542	31,872	33,319	33,060	33,352	34,950	35,760	37,370
South Carolina	32,999	30,698	31,297	30,603	30,680	30,313	31,368	32,000	32,450	33,450
Tennessee	44,847	45,138	44,166	40,643	43,556	43,792	44,523	44,640	46,020	47,390
Texas	174,306	162,270	160,546	163,191	170,322	171,844	179,422	188,350	194,180	200,910
Virginia	58,441	57,338	56,948	56,140	58,260	58,166	60,217	61,580	63,180	65,160
West Virginia	21,064	20,054	20,228	19,884	20,131	20,335	19,675	20,160	19,930	19,710
West	451,730	466,044	475,806	485,101	492,634	496,218	523,472	544,570	562,820	585,090
Alaska	5,458	5,535	5,535	5,747	5,765	5,945	6,108	6,450	6,750	6,980
Arizona	31,282	31,264	31,747	31,799	30,989	30,008	33,627	36,110	37,860	40,580
California	234,164	244,594	249,320	253,083	255,200	259,071	271,549	281,850	290,780	299,870
Colorado	31,293	31,059	31,839	31,867	32,409	32,608	34,198	36,350	37,880	40,080
Hawaii	8,974	9,160	8,854	9,369	9,407	9,387	9,639	9,410	10,170	10,670
Idaho	11,961	12,734	12,974	13,281	14,198	14,667	15,402	15,720	15,760	16,600
Montana	9,013	9,046	9,389	9,601	10,134	10,139	10,323	10,630	11,110	11,310
Nevada	9,370	8,811	9,042	9,485	10,038	10,374	11,425	12,270	13,120	14,110
New Mexico	15,157	14,824	15,172	14,892	14,928	15,402	15,440	16,340	16,770	17,650
Oregon	24,597	25,305	26,301	26,338	26,713	26,570	28,091	28,110	29,170	30,710
Utah	22,219	23,513	24,197	26,407	27,670	26,293	28,934	30,100	29,810	30,460
Washington	42,514	44,381	45,262	47,235	49,294	49,862	52,345	54,770	57,110	59,290
Wyoming	5,728	5,818	6,174	5,997	5,889	5,892	6,391	6,460	6,540	6,780

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Table 51.—Number of high school graduates in public schools, by region and state, with projections: 1990–91 to 2008–09—Continued

Region and state	Projected								
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09
United States	2,593,270	2,606,740	2,672,820	2,671,790	2,682,040	2,736,200	2,803,300	2,862,440	2,909,760
Northeast	461,750	464,770	475,260	480,410	484,240	496,000	505,450	510,420	511,150
Connecticut	30,830	31,950	32,720	33,360	33,890	34,790	35,610	35,730	34,700
Maine	12,290	12,480	12,600	12,610	12,010	12,160	11,900	11,860	11,390
Massachusetts	54,310	56,160	58,100	58,560	60,000	61,530	63,240	64,190	62,960
New Hampshire	12,280	12,400	13,030	12,940	13,240	13,300	13,450	13,380	12,710
New Jersey	73,430	73,740	75,590	75,880	76,600	79,070	81,970	83,580	85,090
New York	145,800	145,740	148,020	148,930	151,060	155,630	159,110	161,560	166,450
Pennsylvania	117,150	116,320	119,380	122,250	121,500	123,520	123,930	124,460	122,380
Rhode Island	8,540	8,770	8,750	8,810	9,010	9,130	9,220	8,800	8,870
Vermont	7,130	7,200	7,060	7,080	6,940	6,870	7,030	6,860	6,590
Midwest	670,510	673,830	700,040	690,730	686,670	695,880	710,340	724,440	713,860
Illinois	132,570	139,400	153,970	149,170	149,990	156,900	160,360	165,740	168,860
Indiana	57,880	57,250	57,010	56,790	56,790	59,300	61,130	61,960	62,010
Iowa	34,780	34,000	34,400	33,740	32,420	32,520	33,190	33,620	32,790
Kansas	29,680	29,350	29,810	29,460	28,730	28,730	28,540	28,990	27,970
Michigan	90,670	91,660	94,610	93,650	94,260	94,310	97,700	101,440	96,900
Minnesota	58,870	59,410	60,900	60,770	59,400	60,040	60,840	61,790	59,060
Missouri	54,290	53,710	55,110	55,010	54,500	54,710	56,310	56,960	57,480
Nebraska	20,100	20,230	20,040	19,860	19,400	19,290	19,560	20,000	19,230
North Dakota	8,990	8,800	8,750	8,620	8,260	8,280	8,270	8,130	7,450
Ohio	113,120	110,560	113,770	112,530	112,500	112,640	114,130	115,370	114,230
South Dakota	9,680	9,640	9,760	9,550	9,400	9,100	9,270	9,240	8,710
Wisconsin	59,880	59,840	61,920	61,590	61,020	60,070	61,040	61,200	59,170
South	869,720	872,250	890,300	889,780	894,770	910,510	938,610	951,950	977,150
Alabama	37,180	36,760	36,120	35,940	36,450	35,920	37,390	38,590	38,630
Arkansas	27,320	26,970	27,200	26,700	26,620	26,920	27,770	28,490	28,830
Delaware	6,620	6,590	6,680	6,810	6,640	6,900	6,680	6,720	6,980
District of Columbia	2,530	2,440	2,400	2,440	2,290	2,430	2,600	2,610	2,690
Florida	113,220	116,350	120,470	120,330	121,650	125,920	130,210	133,450	136,960
Georgia	66,940	67,540	68,580	69,490	71,110	73,080	76,590	79,040	79,740
Kentucky	37,030	36,180	36,080	34,900	35,180	35,590	36,450	36,600	37,080
Louisiana	37,780	36,940	37,670	37,060	35,880	35,150	35,130	35,480	35,180
Maryland	48,190	48,660	49,260	49,800	50,950	51,670	53,070	54,150	53,570
Mississippi	23,630	23,150	22,830	22,460	22,030	22,510	22,840	23,360	23,680
North Carolina	66,920	68,340	71,440	73,090	75,250	78,540	83,040	85,090	87,110
Oklahoma	37,390	36,780	36,700	36,340	35,630	35,620	36,060	36,140	36,570
South Carolina	32,620	32,430	32,920	32,740	32,500	33,270	34,340	30,020	33,700
Tennessee	46,970	46,590	48,120	48,250	48,030	49,730	51,680	52,400	53,630
Texas	202,200	203,280	208,200	208,780	210,200	212,590	216,110	219,610	232,580
Virginia	64,190	65,140	67,550	66,780	66,590	67,210	70,730	72,150	72,000
West Virginia	19,010	18,100	18,090	17,890	17,760	17,480	17,930	18,050	18,230
West	591,290	595,890	607,220	610,860	616,360	633,800	648,900	675,640	707,590
Alaska	6,910	7,070	7,260	7,290	7,120	7,290	7,320	7,290	7,120
Arizona	42,280	43,400	45,440	47,060	47,960	50,560	52,650	56,100	59,040
California	304,160	307,240	313,760	315,420	319,850	331,200	338,210	354,320	381,740
Colorado	40,500	40,670	41,480	42,200	42,020	42,350	43,330	44,630	44,870
Hawaii	10,640	10,800	10,870	10,780	11,010	11,100	11,470	12,020	12,290
Idaho	16,340	16,350	15,860	15,370	15,780	16,280	16,420	16,920	17,040
Montana	11,150	11,180	11,240	11,130	10,810	10,710	10,440	10,640	10,240
Nevada	14,740	15,390	16,440	17,370	18,010	19,160	20,610	22,280	23,240
New Mexico	17,770	17,480	17,750	17,380	18,130	17,570	17,930	17,990	18,490
Oregon	31,000	30,670	31,250	31,340	31,060	31,490	32,600	33,030	32,750
Utah	29,350	28,870	28,360	28,230	27,880	28,760	28,830	29,610	29,900
Washington	59,810	60,200	61,090	61,170	60,830	61,560	63,450	65,250	65,460
Wyoming	6,650	6,570	6,460	6,120	5,910	5,780	5,650	5,560	5,430

NOTE: Historical numbers may differ from those in previous editions. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and State Public High School Graduates Model. (This table was prepared July 1999.)

Table 52.—Percent change in number of public high school graduates, by region and state, with projections: 1990–91 to 2008–09

Region and state	Actual	Projected		
	1990–91 to 1996–97	1996–97 to 2002–03	2002–03 to 2008–09	1996–97 to 2008–09
United States	6.1	12.7	8.9	22.7
Northeast	2.0	11.2	7.6	19.6
Connecticut	-1.0	21.1	6.1	28.4
Maine	-10.9	7.6	-9.6	-2.8
Massachusetts	-2.9	19.2	8.4	29.2
New Hampshire	3.3	25.4	-2.4	22.4
New Jersey	3.1	9.4	12.6	23.1
New York	3.0	7.6	12.5	21.0
Pennsylvania	4.0	9.6	2.5	12.3
Rhode Island	1.2	11.6	1.4	13.2
Vermont	15.7	17.0	-6.6	9.3
Midwest	7.8	11.2	2.0	13.4
Illinois	18.8	25.4	9.7	37.6
Indiana	-1.8	0.3	8.8	9.1
Iowa	14.9	4.7	-4.7	-0.2
Kansas	9.3	11.7	-6.2	4.8
Michigan	-1.3	8.7	2.4	11.3
Minnesota	14.4	14.5	-3.0	11.1
Missouri	7.5	9.2	4.3	13.9
Nebraska	11.8	8.6	-4.0	4.2
North Dakota	7.4	7.5	-14.8	-8.4
Ohio	1.6	4.2	0.4	4.6
South Dakota	25.9	8.7	-10.7	-2.9
Wisconsin	11.2	12.9	-4.4	7.8
South	1.4	12.5	9.8	23.5
Alabama	-5.1	-2.5	6.9	4.3
Arkansas	-0.8	6.8	6.0	13.2
Delaware	10.6	15.6	4.5	20.8
District of Columbia	-16.2	-15.1	12.4	-4.6
Florida	8.0	27.6	13.7	45.0
Georgia	-2.6	17.2	16.3	36.3
Kentucky	2.9	-2.1	2.8	0.6
Louisiana	10.9	1.4	-6.6	-5.3
Maryland	9.7	15.1	8.8	25.2
Mississippi	-2.6	-0.9	3.7	2.8
North Carolina	-6.4	21.6	21.9	48.2
Oklahoma	1.0	10.0	-0.4	9.7
South Carolina	-4.9	4.9	2.4	7.4
Tennessee	-0.7	8.1	11.5	20.5
Texas	2.9	16.0	11.7	29.6
Virginia	3.0	12.2	6.6	19.6
West Virginia	-6.6	-8.0	0.8	-7.3
West	15.9	16.0	16.5	35.2
Alaska	11.9	18.8	-1.9	16.5
Arizona	7.5	35.1	29.9	75.6
California	16.0	15.5	21.7	40.6
Colorado	9.3	21.3	8.2	31.2
Hawaii	7.4	12.7	13.1	27.5
Idaho	28.8	3.0	7.4	10.6
Montana	14.5	8.8	-8.9	-0.8
Nevada	21.9	43.9	41.4	103.4
New Mexico	1.9	15.0	4.2	19.8
Oregon	14.2	11.3	4.8	16.6
Utah	30.2	-2.0	5.4	3.3
Washington	23.1	16.7	7.2	25.1
Wyoming	11.6	1.0	-15.9	-15.0

NOTE: Calculations are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and State Public High School Graduates Model. (This table was prepared July 1999.)

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Technical Appendixes

Appendix A

Projection Methodology

The general procedure for *Projections* was to express the variable to be projected as a percent of a "base" variable. These percents were then projected and applied to projections of the "base" variable. For example, the number of 18-year-old college students was expressed as a percent of the 18-year-old population for each year from 1972 through 1996. This enrollment rate was then projected through the year 2009 and applied to projections of the 18-year-old population from the Bureau of the Census.

Enrollment projections are based primarily on population projections. Projections of classroom teachers, high school graduates, earned degrees conferred, and expenditures are based primarily on enrollment projections.

Exponential smoothing and multiple linear regression are the two major projection techniques used in this publication. Single exponential smoothing is used when the historical data have a basically horizontal pattern. On the other hand, double exponential smoothing is used when the time series is expected to change linearly with time. In general, exponential smoothing places more weight on recent observations than on earlier ones. The weights for observations decrease exponentially as one moves further into the past. As a result, the older data have less influence on these projections. The rate at which the weights of older observations decrease is determined by the smoothing constant selected.

$$P = \alpha X_t + \alpha(1-\alpha)X_{t-1} + \alpha(1-\alpha)^2 X_{t-2} + \alpha(1-\alpha)^3 X_{t-3} + \ldots$$

Where:

P = projected value

α = smoothing constant $(0 < \alpha < 1)$

X_t = observation for time t

This equation illustrates that the projection is a weighted average based on exponentially decreasing weights. For a high smoothing constant, weights for earlier observations decrease rapidly. For a low smoothing constant, decreases are more moderate. Projections of enrollments and public high school graduates are based on a smoothing constant of $\alpha = 0.4$.

The farther apart the observations are spaced in time, the more likely it is that there are changes in the underlying social, political, and economic structure. Since the observations are on an annual basis, major shifts in the underlying process are more likely in the time span of just a few observations than if the observations were available on a monthly or weekly basis. As a result, the underlying process tends to be unstable from one observation to the next. Another reason for using high smoothing constants for some time series is that most of the observations are fairly accurate, because most observations are population values rather than sample estimates. Therefore, large shifts tend to indicate actual changes in the process rather than noise in the data.

Multiple linear regression is also used in making projections, primarily in the areas of teachers, earned degrees, and expenditures. This technique is used when it is believed that a strong causal relationship exists between the variable being projected (the dependent variable) and independent causal variables. However, this technique is used only when accurate data and reliable projections of the independent variables are available.

The functional form primarily used is the multiplicative model. When used with two independent variables, this model takes the form:

$$Y = aX_1^{b_1}X_2^{b_2}$$

This equation can easily be transformed into the linear form by taking the natural log (ln) of both sides of the equation:

$$\ln Y = \ln(a) + b_1 \ln X_1 + b_2 \ln X_2$$

The multiplicative model has a number of advantages. Research has found that it is a reasonable way to represent human behavior. Constant elasticities are assumed, which means that a 1 percent change in lnX will lead to a given percent change in lnY. This percent change is equal to b_1. And the multiplicative model lends itself easily to "a priori" analysis because the researcher does not have to worry about units of measurement when specifying relationships. In fact, the multiplicative model is considered the standard in economic analyses. For additional information, see *Long-Range Forecasting: From Crystal Ball to Computer* by J. Scott Armstrong (John Wiley and Sons, 1978, pp. 180–181).

Caveats

Because projections are subject to errors from many sources, alternative projections are shown for some statistical series. These alternatives are not statistical confidence intervals, but instead represent outcomes based on alternative economic growth patterns. Alternative projections were developed for higher education enrollment, classroom teachers, and expenditures in public elementary and secondary schools and institutions of higher education.

Assumptions

All projections are based on underlying assumptions, and these assumptions determine projection results to a large extent. It is important that users of projections understand the assumptions to determine the acceptability of projected time series for their purposes. In each section of appendix A, there are descriptions of the primary assumptions upon which the projections of time series are based.

For most projections, low, middle, and high alternatives are shown. These alternatives reveal the level of uncertainty involved in making projections, and they also point out the sensitivity of projections to the assumptions on which they are based.

Many of the projections in this publication are demographically based on Bureau of the Census middle series projections of the population by age. These middle series population projections are based on the 1990 census. The future fertility rate assumption, which determines projections of the number of births, is one key assumption in making population projections. The middle series population projections assume an ultimate complete cohort fertility rate of 2.10 births per woman by the year 2009 and a net immigration of 820,000 per year. This assumption plays a major role in determining population projections for the age groups enrolled in nursery school, kindergarten, and elementary grades. The effects of the fertility rate assumption are more pronounced toward the end of the projection period, while the immigration assumptions affect all years.

For enrollments in secondary grades and college, the fertility assumption is of no consequence, since all students enrolled at these levels were already born when the population projections were made. For projections of enrollments in elementary schools, only middle series population projections were considered. Projections of high school graduates are based on projections of the percent of grade 12 enrollment that are high school graduates. Projections of associate, bachelor's, doctor's, and first-professional degrees are based on projections of college-age populations and higher education enrollment, by sex, attendance status and level enrolled by student, and by type of institution. Projections of higher education enrollment are also based on projections of disposable income per capita and unemployment rates. The projections of classroom teachers are based on education revenue receipts from state sources and enrollments. The projections of expenditures of public elementary and secondary schools and institutions of higher education are based on enrollments and projections of disposable income per capita and various revenue measures of state and local governments. Projections of disposable income per capita and unemployment rates were obtained from Standard and Poor's DRI. Therefore, many additional assumptions made in projecting disposable income per capita and unemployment rates apply to projections based on projections of these variables.

A1. Enrollment

National

Enrollment projections were based on projected enrollment rates, by age and sex, which were applied to population projections by age and sex developed by the Bureau of the Census. These enrollment rates were projected by taking into account the most recent trends, as well as the effects of economic conditions and demographic changes on a person's decision to enter college. The enrollment rates were then used in the Education Forecasting Model (EDMOD), which consists of age-specific rates by sex and by enrollment levels (nursery school through college). The model has 4 stages. See figure 71.

Education Forecasting Model

The first stage of EDMOD is an age-specific enrollment model in which enrollment rates are projected and applied to age-specific population projections. This stage, which is used separately for each sex, includes the following categories: (1) elementary grades 1–8, (2) secondary grades 9–12, (3) full-time college enrollment, and (4) part-time college enrollment. Within an enrollment category, where applicable, enrollment rates were projected by individual ages 3 through 24 and for the age groups 25 to 29, 30 to 34, and 35 years and over.

Enrollments by age and age groups from the Bureau of the Census were adjusted to NCES totals to compute enrollment rates for 1972 through 1996. Different economic assumptions were made to produce low, middle, and high alternative projections of enrollment rates to the year 2009.

Elementary Grades 1–8

Projections of elementary enrollment rates were considered for ages 5 through 18. Elementary enrollments are negligible for other ages. Because most elementary enrollment rates have been close to 100 percent from 1972 to 1996, alternative enrollment rate projections were not computed. The only set of enrollment rate projections computed was based on the assumption that rates will remain constant through the year 2009 (table A1.1). The enrollment data by age were prorated to agree with NCES totals. The Bureau of the Census does not revise enrollment estimates by age, but population estimates are revised regularly.

Secondary Grades 9–12

Projections of secondary enrollment rates were considered for ages 12 through 34. Secondary enrollment rates have fluctuated within a narrow range from 1972 to 1996. Therefore, alternative enrollment rate projections were not calculated. The only set of projections computed was based on constant enrollment rates (table A1.2).

College Full-Time and Part-Time Enrollment

Projections of full-time and part-time college enrollments were considered only for ages 16 and over. College enrollment is negligible for earlier ages. Three alternative projections were made using various economic assumptions. Table A1.3 shows enrollment rates for 1996 and low, middle, and high alternative projected enrollment rates for 2004 and 2009.

Table A1.4 shows the equations used to project enrollment rates for men by attendance status. Table A1.5 shows the equations used to project enrollment rates for women by attendance status.

Enrollment in Public Elementary and Secondary Schools, by Grade Group and Organizational Level

The second stage of EDMOD projects public enrollment in elementary and secondary schools by grade group and by organizational level. Public enrollments by age were based on enrollment rate projections for nursery and kindergarten, grade 1, elementary ungraded and special, secondary ungraded and special, and postgraduate enrollment. Grade retention rate projections were used for grades 2 through 12. Table A1.6 shows the public school enrollment rates and table A1.7 shows the public grade-retention rates for 1996 and projections for 2004 and 2009. The projected rates in tables A1.6 and A1.7 were used to compute the projections of enrollments in elementary and secondary schools, by grade, shown in table 1.

College Enrollment, by Sex, Attendance Status, and Level Enrolled; and by Type and Control of Institution

The third stage of EDMOD projects enrollments in institutions of higher education, by sex, attendance status, and level enrolled by student and by type and control of institution. For each age group, the percent of total enrollment by age, attendance status, level enrolled, and type of institution was projected. These projections for 2004 and 2009 are shown in tables A1.8 and A1.9, along with actual values for 1996. For all projections, it was assumed that there was no enrollment in 2-year institutions at the postbaccalaureate level (graduate and first-professional).

The projected rates in tables A1.8 and A1.9 were then adjusted to agree with the projected age-specific enrollment rates in the first stage of EDMOD. The adjusted rates were then applied to the projected enrollments by age group, sex, and attendance status from the first stage of

EDMOD to obtain projections by age group, sex, attendance status, level enrolled, and type of institution.

For each enrollment category—sex, attendance status, level enrolled, and type of institution—public enrollment was projected as a percent of total enrollment. Projections for 2004 and 2009 are shown in table A1.10, along with actual percents for 1996. The projected rates were then applied to the projected enrollments in each enrollment category to obtain projections by control of institution.

For each category by sex, enrollment level, and type and control of institution, graduate enrollment was projected as a percent of postbaccalaureate enrollment. Actual rates for 1996 and projections for 2004 and 2009 are shown in table A1.11. The projected rates in table A1.11 were then applied to projections of postbaccalaureate enrollment to obtain graduate and first-professional enrollment projections by sex, attendance status, and type and control of institution.

Full-Time-Equivalent Enrollment, by Type and Control of Institution and by Level Enrolled

The fourth stage of EDMOD projects full-time-equivalent enrollment, by type and control of institution and by level enrolled. For each enrollment category by level enrolled and by type and control of institution, the full-time-equivalent of part-time enrollment was projected as a percent of part-time enrollment. Actual percents for 1996 and projections for 2004 and 2009 are shown in table A1.12.

These projected percents were applied to projections of enrollment by level enrolled and by type and control of institution from the third stage of EDMOD. The projections were added to projections of full-time enrollment (from the previous stage) to obtain projections of full-time-equivalent enrollment.

Projection Accuracy

An analysis of projection errors from the past 15 editions of *Projections of Education Statistics* indicates that the mean absolute percentage errors (MAPEs) for lead times of 1, 2, 5, and 10 years out for projections of public school enrollment in grades K–12 were 0.4, 0.6, 1.3, and 2.4 percent, respectively. For the 1-year-out prediction, this means that one would expect the projection to be within 0.4 percent of the actual value, on the average. For projections of public school enrollment in grades K–8, the MAPEs for lead times of 1, 2, 5, and 10 years were 0.5, 0.7, 1.6, and 3.6 percent, respectively, while those for projections of public school enrollment in grades 9–12 were 0.8, 0.9, 1.1, and 3.8 percent for the same lead times.

For projections of total enrollment in higher education, an analysis of projection errors based on the past 12 editions of *Projections of Education Statistics* indicates that the MAPEs for lead times of 1, 2, and 5 years were 2.2, 3.4, and 5.8 percent, respectively. For the 1-year-out prediction, this means that one would expect the projection to be within 2.2 percent of the actual value, on the average.

Basic Methodology

The notation and equations that follow describe the basic models used to project public elementary and secondary enrollment.

Public Elementary and Secondary Enrollment

Let:

i = Subscript denoting age

j = Subscript denoting grade

t = Subscript denoting time

K_t = Enrollment at the nursery and kindergarten level

G_{jt} = Enrollment in grade j

G_{1t} = Enrollment in grade 1

E_t = Enrollment in elementary special and ungraded programs

S_t = Enrollment in secondary special and ungraded programs

PG_t = Enrollment in postgraduate programs in secondary schools

P_{it} = Population age i

RK_t = Enrollment rate for nursery and kindergarten

RG_{1t} = Enrollment rate for grade 1

RE_t = Enrollment rate for elementary special and ungraded programs

RS_t = Enrollment rate for secondary special and ungraded programs

RPG_t = Enrollment rate for postgraduate programs

EG_t = Total enrollment in elementary grades (K–8)

SG_t = Total enrollment in secondary grades (9–12)

R_{jt} = Retention rate for grade j: the proportion that enrollment in grade j in year t is of enrollment in grade j–1 in year t–1.

Then:

$$EG_t = K_t + E_t + \sum_{j=1}^{8} G_{jt}$$

$$SG_t = S_t + PG_t + \sum_{j=9}^{12} G_{jt}$$

Where:

$K_t \quad = RK_t(P_{5t})$

$G_{jt} \quad = R_{jt}(G_{j-1,t-1})$

$$E_t = RE_t\left(\sum_{i=5}^{13} P_{it}\right)$$

$G_{1t} \quad = RG_{1t}(P_{6t})$

$$S_t = RS_t\left(\sum_{i=14}^{17} P_{it}\right)$$

$PG_t \quad = RPG_t(P_{18t})$

Higher Education Enrollment

For institutions of higher education, projections were computed separately by sex and attendance status of student. The notation and equations are:

Let:

i = Subscript denoting age except:

$i = 25$: ages 25–29

$i = 26$: ages 30–34

$i = 27$: ages 35 and over for enrollment (35–44 for population)

t = Subscript denoting year

E_{it} = Enrollment of students age i

P_{it} = Population age i

R_{it} = Enrollment rate for students age i

T_{it} = Total enrollment for particular subset of students: full-time men, full-time women, part-time men, part-time women

Then:

$$T_{it} = \sum_{i=16}^{27} E_{it}$$

Where:

$E_{it} \quad = R_{it}(P_{it})$

Methodological Tables

Table A1.13 gives the rates used to calculate projections of enrollments and basic assumptions underlying enrollment projections. Methods used to estimate values for which data are not available appear in table A1.14.

Private School Enrollment

Projections of private school enrollment were derived in the following manner. From 1970 to 1996, the ratio of private school enrollment to public school enrollment was calculated by grade level. These ratios were projected using single exponential smoothing, yielding a constant value over the projection period. This constant was then applied to projections of public school enrollment by grade level to yield projections of private school enrollment. This method assumes that the future pattern in the trend of private school enrollment will be the same as that in public school enrollment. The reader is cautioned that a number of factors could alter the assumption of a constant ratio over the projection period.

State-Level

This edition contains projected trends in elementary and secondary enrollment by grade level in public schools from 1998 to the year 2009. This is the sixth report on state-level projections for public school elementary and secondary education statistics.

Public school enrollment data from the National Center for Education Statistics' Common Core of Data survey for 1970 to 1996 were used to develop these projections. This survey does not collect data on enrollment for private schools. In addition, population estimates for 1970 to 1997 and population projections for 1998 to 2009 from the U.S. Department of Commerce, Bureau of the Census were used to develop the projections.

Table A1.15 describes the number of years, projection methods, and smoothing constants used to project enrollments in public schools. Also included in table A1.15 is the procedure for choosing the different smoothing constants for the time series models.

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The grade retention method was used to project public elementary and secondary school enrollment by state. The grade retention method starts with 6-year-olds entering first grade and then follows their progress through public elementary and secondary schools. The method requires calculating the ratio of the number of children in one year who "survive" the year and enroll in the next grade the following year.

Projections of enrollment in public elementary and secondary schools by state were developed using primarily the grade retention method. Kindergarten and first grade enrollments are based on projected enrollment rates of 5- and 6-year-olds. These projected enrollment rates are applied to population projections of 5- and 6-year-olds developed by the Bureau of the Census.

Enrollments in grades 2 through 12 are based on projected grade retention rates in each state. These projected rates are then applied to the current enrollment by grade to yield grade-by-grade projections for future years. Enrollment rates of 5- and 6-year-olds and retention rates are projected using single exponential smoothing. Elementary ungraded and special enrollments and secondary ungraded and special enrollments are projected to remain constant at their 1996 levels. To obtain projections of total enrollment, projections of enrollments for the individual grades (kindergarten through 12) and ungraded and special classes were summed.

The grade retention method assumes that past trends in factors affecting public school enrollments will continue over the projection period. This assumption implies that all factors influencing enrollments will display future patterns consistent with past patterns. Therefore, this method has limitations when applied to states with unusual changes in migration rates. This method implicitly includes the net effect of such factors as migration, dropouts, deaths, nonpromotion, and transfers to and from private schools.

Adjustment to National Projections

The sum of the projections of state enrollments was adjusted to equal the national projections of public school K–12, K–8, and 9–12 enrollments shown in table 1. For details on the methods used to develop the national projections for this statistic, see the section on national enrollment projections in this appendix.

Figure 71

General structure and methodology of the Education Forecasting Model (EDMOD)

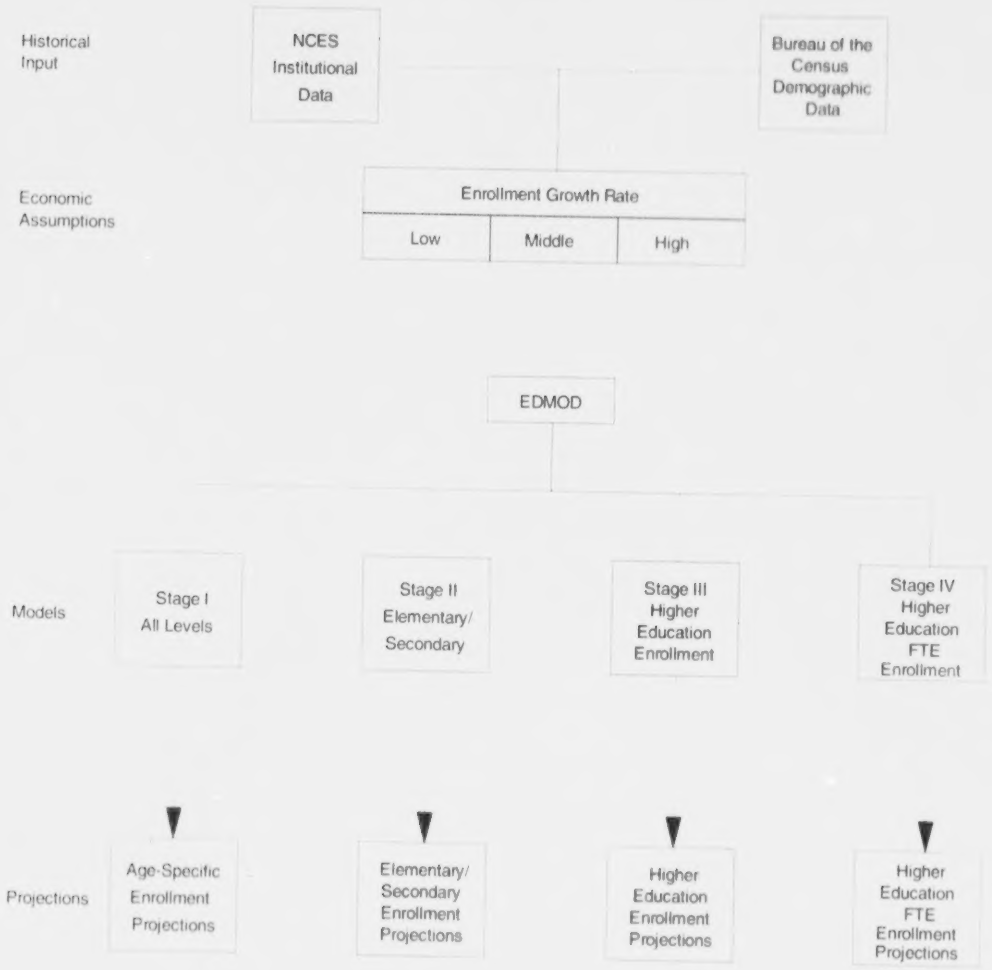
Historical Input
NCES Institutional Data
Bureau of the Census Demographic Data
Economic Assumptions
Enrollment Growth Rate
Low
Middle
High
EDMOD
Models
Stage I All Levels
Stage II Elementary/ Secondary
Stage III Higher Education Enrollment
Stage IV Higher Education FTE Enrollment
Projections
Age-Specific Enrollment Projections
Elementary/ Secondary Enrollment Projections
Higher Education Enrollment Projections
Higher Education FTE Enrollment Projections

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Table A1.1.—Elementary enrollment rates, by age and sex

Age	Boys		Girls	
	1996	1998–2009	1996	1998–2009
5	5.2	5.8	5.8	6.3
6	86.3	86.8	89.2	90.3
7	105.0	104.6	105.2	104.8
8	108.3	106.0	106.2	106.1
9	101.4	101.9	103.3	103.0
10	105.2	103.9	104.4	103.6
11	102.1	100.9	105.2	104.3
12	102.1	104.2	110.2	105.8
13	98.2	98.2	96.8	96.6
14	33.5	35.5	23.5	24.7
15	4.5	5.1	2.7	3.3
16	0.7	0.6	0.4	0.4
17	0.0	0.1	0.5	0.4
18	0.0	0.1	0.0	0.2

Table A1.2.—Secondary enrollment rates, by age and sex

Age	Boys		Girls	
	1996	1998–2009	1996	1998–2009
12	1.3	0.7	0.3	0.3
13	5.0	4.5	5.6	5.9
14	64.3	62.4	72.1	72.1
15	88.0	88.8	88.6	91.0
16	94.0	92.3	90.8	91.7
17	78.7	81.8	79.5	80.9
18	31.5	30.5	20.4	20.1
19	6.9	6.6	4.1	4.2
20	2.3	1.8	1.6	1.5
21	0.5	0.6	1.3	0.9
22	0.5	0.4	0.7	0.6
23	0.1	0.2	0.6	0.6
24	0.3	0.4	0.7	0.6
25-29	0.2	0.2	0.3	0.3
30-34	0.1	0.2	0.3	0.4

Table A1.3.—College enrollment rates, by age, sex, and attendance status, with alternative projections

Age, sex, and attendance status	1996	Low alternative		Middle alternative		High alternative	
		2004	2009	2004	2009	2004	2009
Men							
Full-time:							
16	0.4	0.3	0.3	0.3	0.3	0.3	0.3
17	3.1	3.7	3.7	3.7	3.7	3.7	3.7
18	24.6	30.0	30.1	29.9	30.2	29.7	30.4
19	34.0	32.3	32.4	32.2	32.5	32.0	32.7
20	25.7	27.3	27.3	27.1	27.3	26.9	27.5
21	26.3	25.6	25.6	25.5	25.7	25.3	25.9
22	22.4	17.8	17.7	17.7	17.7	17.5	17.8
23	15.7	12.5	12.5	12.4	12.6	12.3	12.7
24	9.9	9.6	9.6	9.5	9.6	9.4	9.7
25-29	4.6	4.2	4.2	4.2	4.2	4.1	4.3
30-34	1.3	1.7	1.7	1.6	1.7	1.6	1.7
35-44	1.1	0.8	0.8	0.8	0.8	0.8	0.8
Part-time:							
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	1.1	0.8	0.7	0.8	0.8	0.8	0.8
18	5.1	4.9	5.0	5.0	5.0	5.0	5.1
19	7.1	5.5	5.5	5.6	5.6	5.7	5.7
20	7.0	6.8	6.9	6.9	7.0	7.0	7.1
21	7.2	6.4	6.5	6.5	6.6	6.6	6.6
22	8.5	8.8	8.9	8.9	9.0	9.0	9.1
23	5.9	6.6	6.6	6.6	6.7	6.7	6.8
24	3.7	5.1	5.2	5.2	5.3	5.3	5.3
25-29	5.8	5.9	6.0	6.0	6.1	6.0	6.2
30-34	3.2	3.6	3.8	3.7	3.8	3.7	3.9
35-44	3.7	3.7	3.8	3.8	3.8	3.8	3.9
Women							
Full-time:							
16	0.7	0.4	0.4	0.4	0.4	0.4	0.4
17	4.1	5.2	5.5	5.3	5.7	5.4	6.0
18	37.3	41.9	42.6	42.2	43.6	42.4	44.8
19	41.6	42.1	42.7	42.3	43.7	42.5	44.9
20	36.1	35.3	35.8	35.5	36.7	35.6	37.9
21	29.7	31.6	32.1	31.8	33.0	31.9	34.1
22	18.9	16.5	16.8	16.7	17.3	16.7	18.0
23	13.6	12.3	12.5	12.4	13.0	12.5	13.5
24	10.9	10.1	10.3	10.2	10.7	10.3	11.2
25-29	4.9	4.2	4.3	4.2	4.4	4.2	4.7
30-34	2.2	2.3	2.4	2.3	2.4	2.3	2.6
35-44	1.5	1.8	1.9	1.8	1.9	1.8	2.0
Part-time:							
16	0.0	0.1	0.1	0.1	0.1	0.1	0.1
17	2.5	0.7	0.7	0.7	0.7	0.7	0.7
18	6.8	6.4	6.4	6.5	6.5	6.6	6.5
19	7.6	6.4	6.4	6.5	6.5	6.6	6.5
20	9.0	7.8	7.8	7.9	7.9	8.0	8.0
21	7.3	7.1	7.2	7.2	7.2	7.3	7.3
22	10.4	10.5	10.6	10.6	10.8	10.8	11.0
23	7.6	8.0	8.1	8.1	8.3	8.3	8.5
24	6.1	6.7	6.8	6.8	6.9	6.9	7.1
25-29	7.1	7.2	7.3	7.3	7.5	7.5	7.7
30-34	4.5	5.5	5.7	5.6	5.9	5.7	6.0
35-44	6.5	7.6	7.7	7.7	7.9	7.9	8.1

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Table A1.4.—Equations for full-time and part-time college enrollment rates of men

Independent variable	Coefficient	Standard error	T-statistic	R^2	F-Statistic
Full-time					
Constant	-2.87	0.12	-24.5	.99	809.7
Dummy18	2.50	0.08	29.7		
Dummy19	2.62	0.08	31.4		
Dummy20	2.43	0.09	26.9		
Dummy21	2.34	0.09	24.8		
Dummy22	1.88	0.14	13.8		
Dummy23	1.44	0.13	11.5		
Dummy24	1.12	0.13	8.4		
Dummy25-29	0.31	0.13	2.4		
Dummy30-34	-0.68	0.10	-6.9		
Dummy35-44	-1.41	0.17	-8.4		
LNURM	0.07	0.04	2.0		
LNPCIMA	0.23	0.03	7.1		
Rho17	0.24	0.21	1.2		
Rho18	0.57	0.23	2.5		
Rho19	0.26	0.21	1.2		
Rho20	0.35	0.21	1.7		
Rho21	0.30	0.21	1.4		
Rho22	0.67	0.20	3.4		
Rho23	0.55	0.21	2.6		
Rho24	0.72	0.15	4.7		
Rho25-29	0.64	0.13	4.8		
Rho30-34	0.34	0.15	2.3		
Rho35-44	0.72	0.12	6.1		
Part-time					
Constant	-4.47	0.08	-58.3	.94	163.2
Dummy18	2.28	0.07	33.4		
Dummy19	2.44	0.10	23.6		
Dummy20	2.60	0.06	46.8		
Dummy21	2.50	0.07	37.2		
Dummy22	2.74	0.07	37.3		
Dummy23	2.35	0.06	41.2		
Dummy24	2.05	0.06	33.0		
Dummy25-29	2.14	0.10	21.4		
Dummy30-34	1.64	0.13	12.2		
Dummy35-44	1.62	0.06	28.5		
LNPCIMA	0.31	0.04	8.8		
Rho17	-0.68	0.17	-4.1		
Rho18	0.18	0.21	0.8		
Rho19	0.64	0.20	3.2		
Rho20	0.35	0.21	1.6		
Rho21	0.57	0.19	3.0		
Rho22	0.18	0.22	0.8		
Rho23	-0.07	0.21	-0.3		
Rho24	0.32	0.22	1.4		
Rho25-29	0.67	0.13	5.1		
Rho30-34	0.83	0.12	6.8		
Rho35-44	0.60	0.11	5.4		

R^2 = Coefficient of determination.
F-Statistic = Obtained statistic for the F value.

Where:

Dummy(age) = 1 for each age and 0 otherwise.
Rho(age) = Autocorrelation coefficient for each age.
LNURM = Log unemployment rate.
LNPCIMA = Log of four-period weighted average of per capita real disposable income.

NOTE: The regression method used to estimate the full-time and part-time equations was pooled least squares with first-order autocorrelation correction. The time period used to estimate the equations is from 1975 to 1996. The number of observations is 242. For additional information, see *The Modern Forecaster* by Hans Levenbach and James P. Cleary (Van Nostrand Reinhold Company Inc., New York, 1984, pp. 354–373).

Table A1.5.—Equations for full-time and part-time college enrollment rates of women

Independent variable	Coefficient	Standard error	T-statistic	R^2	F-Statistic
Full-time					
Constant	-1.23	0.37	-3.3	.99	855.4
Dummy18	2.68	0.34	7.8		
Dummy19	2.68	0.33	8.2		
Dummy20	2.49	0.34	7.4		
Dummy21	2.30	0.33	7.0		
Dummy22	1.47	0.33	4.4		
Dummy23	1.09	0.33	3.3		
Dummy24	0.85	0.32	2.6		
Dummy25-29	0.05	0.37	0.1		
Dummy30-34	-0.59	0.34	-1.7		
Dummy35-44	-0.81	0.36	-2.3		
LNURM	0.19	0.07	2.7		
LNPCIMA	1.04	0.05	21.8		
Rho17	0.85	0.12	6.9		
Rho18	0.61	0.18	3.4		
Rho19	-0.23	0.22	-1.0		
Rho20	0.11	0.23	0.5		
Rho21	0.47	0.20	2.4		
Rho22	0.65	0.16	4.0		
Rho23	0.65	0.16	4.0		
Rho24	0.68	0.16	4.3		
Rho25-29	0.68	0.18	3.7		
Rho30-34	0.03	0.22	0.1		
Rho35-44	0.06	0.22	0.3		
Part-time					
Constant	-4.30	0.53	-8.2	.76	29.5
Dummy18	2.87	0.52	5.5		
Dummy19	2.87	0.55	5.2		
Dummy20	2.97	0.54	5.5		
Dummy21	2.80	0.57	5.0		
Dummy22	3.02	0.54	5.6		
Dummy23	2.66	0.53	5.0		
Dummy24	2.44	0.53	4.6		
Dummy25-29	2.45	0.52	4.7		
Dummy30-34	2.18	0.57	3.9		
Dummy35-44	2.48	0.53	4.7		
LNPCIMA	0.53	0.03	18.6		
Rho17	0.37	0.21	1.7		
Rho18	0.13	0.22	0.6		
Rho19	0.61	0.18	3.4		
Rho20	0.34	0.22	1.6		
Rho21	0.55	0.19	2.9		
Rho22	0.34	0.21	1.6		
Rho23	0.38	0.21	1.9		
Rho24	0.44	0.20	2.2		
Rho25-29	0.39	0.20	2.0		
Rho30-34	0.82	0.16	5.2		
Rho35-44	0.37	0.22	1.7		

R^2 = Coefficient of determination.
F-Statistic = Obtained statistic for the F value.

Where:

Dummy(age) = 1 for each age and 0 otherwise.
Rho(age) = Autocorrelation coefficient for each age.
LNURM = Log unemployment rate.
LNPCIMA = Log of four-period weighted average of per capita real disposable income.

NOTE: The regression method used to estimate the full-time and part-time equations was pooled least squares with first-order autocorrelation correction. The time period used to estimate the equations is from 1975 to 1996. The number of observations is 242. For additional information, see *The Modern Forecaster* by Hans Levenbach and James P. Cleary (Van Nostrand Reinhold Company Inc., New York, 1984, pp. 354–373).

Table A1.6.—Enrollment rates in public schools, by grade level

Grade level	Population base age	1996	Projected	
			2004	2009
Kindergarten	5	104.0	103.5	103.5
Grade 1	6	93.8	94.8	94.8
Elementary ungraded and special	5–13	1.3	1.4	1.4
Secondary ungraded and special	14–17	1.4	1.6	1.6
Postgraduate	18	0.3	0.3	0.3

Table A1.7.—Public school grade retention rates

Grade	1996	Projected	
		2004	2009
1 to 2	98.0	97.4	97.4
2 to 3	100.3	100.2	100.2
3 to 4	100.1	100.0	100.0
4 to 5	100.5	100.4	100.4
5 to 6	101.4	101.1	101.1
6 to 7	101.8	101.7	101.7
7 to 8	99.3	98.8	98.8
8 to 9	113.0	112.1	112.1
9 to 10	89.5	90.1	90.1
10 to 11	90.4	90.4	90.4
11 to 12	91.4	91.0	91.0

Table A1.8.—Full-time enrollment, by level enrolled and type of institution, as a percent of total enrollment, for each age and sex classification

Age	Men			Women		
	1996	2004	2009	1996	2004	2009
Undergraduate, 4-year institutions						
16-17 years old	66.4	66.9	66.9	57.9	66.1	66.1
18-19 years old	64.7	64.8	64.8	67.3	69.0	69.0
20-21 years old	79.6	80.6	80.6	78.2	78.8	78.8
22-24 years old	66.8	64.6	64.6	61.4	60.1	60.1
25-29 years old	36.9	41.3	41.3	49.0	43.6	43.6
30-34 years old	46.7	39.1	39.1	44.0	41.7	41.7
35 years and over	38.4	36.6	36.6	39.2	41.9	41.9
Undergraduate, 2-year institutions						
16-17 years old	31.2	31.4	31.4	39.5	32.5	32.5
18-19 years old	34.8	34.9	34.9	32.3	30.7	30.7
20-21 years old	19.1	18.2	18.2	19.9	19.8	19.8
22-24 years old	14.6	16.8	16.8	16.4	17.8	17.8
25-29 years old	19.4	16.9	16.9	21.3	24.7	24.7
30-34 years old	15.3	20.4	20.4	33.0	35.1	35.1
35 years and over	24.8	25.8	25.8	28.4	32.6	32.6
Postbaccalaureate, 4-year institutions						
16-17 years old	2.4	1.7	1.7	2.6	1.3	1.3
18-19 years old	0.5	0.3	0.3	0.4	0.3	0.3
20-21 years old	1.2	1.2	1.2	1.8	1.4	1.4
22-24 years old	18.6	18.6	18.6	22.2	22.1	22.1
25-29 years old	43.7	41.7	41.7	29.7	31.7	31.7
30-34 years old	38.0	40.5	40.5	23.0	23.1	23.1
35 years and over	36.8	37.6	37.6	32.4	25.5	25.5

NOTE: Projections shown for 2004 and 2009 were adjusted to add to 100 percent before computing projections shown in tables 3 through 22.

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Table A1.9.—Part-time enrollment, by level enrolled and type of institution, as a percent of total enrollment, for each age and sex classification

Age	Men			Women		
	1996	2004	2009	1996	2004	2009
Undergraduate, 4-year institutions						
16-17 years old	0.0	5.0	5.0	27.9	20.8	20.8
18-19 years old	18.4	19.9	19.9	33.6	26.2	26.2
20-21 years old	33.4	30.2	30.2	25.0	27.4	27.4
22-24 years old	33.7	32.6	32.6	27.5	28.9	28.9
25-29 years old	26.9	27.3	27.3	24.8	25.1	25.1
30-34 years old	21.8	25.3	25.3	30.7	26.9	26.9
35 years and over	22.4	23.1	23.1	21.4	23.5	23.5
Undergraduate, 2-year institutions						
16-17 years old	100.0	89.8	89.8	73.5	79.2	79.2
18-19 years old	81.6	80.0	80.0	65.7	73.4	73.4
20-21 years old	65.4	68.5	68.5	74.1	71.7	71.7
22-24 years old	58.5	59.3	59.3	60.6	58.9	58.9
25-29 years old	52.6	52.3	52.3	56.4	55.4	55.4
30-34 years old	52.6	50.6	50.6	50.1	54.3	54.3
35 years and over	53.5	50.6	50.6	54.2	52.9	52.9
Postbaccalaureate, 4-year institutions						
16-17 years old	0.0	5.2	5.2	0.0	0.0	0.0
18-19 years old	0.0	0.1	0.1	0.7	0.4	0.4
20-21 years old	1.3	1.3	1.3	0.9	0.9	0.9
22-24 years old	7.8	8.1	8.1	11.9	12.2	12.2
25-29 years old	20.5	20.3	20.3	18.8	19.5	19.5
30-34 years old	25.6	24.0	24.0	19.2	18.8	18.8
35 years and over	24.1	26.2	26.2	24.4	23.5	23.5

NOTE: Projections shown for 2004 and 2009 were adjusted to add to 100 percent before computing projections shown in tables 3 through 22.

Table A1.10.—Public college enrollment as a percent of total enrollment, by attendance status, sex, level enrolled, and type of institution

Enrollment category	Men			Women		
	1996	2004	2009	1996	2004	2009
Full-time, undergraduate, 4-year institutions	68.8	69.1	69.1	67.3	67.8	67.8
Part-time, undergraduate, 4-year institutions	72.0	72.2	72.2	67.8	68.1	68.1
Full-time, undergraduate, 2-year institutions	93.6	93.1	93.1	93.5	92.8	92.8
Part-time, undergraduate, 2-year institutions	96.6	97.3	97.3	98.3	98.1	98.1
Full-time, postbaccalaureate, 4-year institutions	54.1	54.7	54.7	56.3	57.2	57.2
Part-time, postbaccalaureate, 4-year institutions	57.5	57.9	57.9	63.0	63.8	63.8

Table A1.11.—Graduate enrollment as a percent of total postbaccalaureate enrollment, by sex, attendance status, and type and control of institution

Enrollment category	Men			Women		
	1996	2004	2009	1996	2004	2009
Full-time, 4-year, public	78.0	78.0	78.0	81.8	81.6	81.6
Part-time, 4-year, public	98.9	98.9	98.9	99.4	99.4	99.4
Full-time, 4-year, private	60.3	59.6	59.6	70.9	69.3	69.3
Part-time, 4-year, private	91.2	91.2	91.2	95.6	95.4	95.4

Table A1.12.—Full-time-equivalent of part-time enrollment as a percent of part-time enrollment, by level enrolled and by type and control of institution

Enrollment category	1996	2004	2009
Public, 4-year, undergraduate	40.4	40.4	40.4
Public, 2-year, undergraduate	33.6	33.6	33.6
Private, 4-year, undergraduate	39.3	39.5	39.5
Private, 2-year, undergraduate	39.7	39.7	39.7
Public, 4-year, graduate	36.2	36.2	36.2
Private, 4-year, graduate	38.2	38.2	38.2
Public, 4-year, first-professional	60.0	60.0	60.0
Private, 4-year, first-professional	54.5	54.5	54.5

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Table A1.13.—Enrollment (assumptions)

Variables	Assumptions	Alternatives	Tables
Elementary and Secondary enrollment	Age-specific enrollment rates will remain constant at levels consistent with the most recent rates.	Middle (no alternatives)	1, 2
	Public enrollment rates and public grade retention rates will remain constant at levels consistent with the most recent rates.	Middle (no alternatives)	1, 2
	The percentage of 7th and 8th grade public students enrolled in school organized as secondary schools will remain constant at levels consistent with the most recent rates.	Middle (no alternatives)	2
College enrollment, by age			
Full-time	Age-specific enrollment rates by sex are a function of dummy variables by age, middle alternative log of four-period weighted average of real disposable income per capita, and middle alternative log unemployment rate by age group.	Middle	3-5 9-16
	Age-specific enrollment rates by sex are a function of dummy variables by age, low alternative log of four-period weighted average of real disposable income per capita, and low alternative log unemployment rate by age group.	Low	3-5 9-16
	Age-specific enrollment rates by sex are a function of dummy variables by age, high alternative log of four-period weighted average of real disposable income per capita, and high alternative log unemployment rate by age group.	High	3-5 9-16
Part-time	Age-specific enrollment rates by sex are a function of dummy variables by age and the middle alternative log of four-period weighted average of real disposable income per capita.	Middle	3-5 9-16
	Age-specific enrollment rates by sex are a function of dummy variables by age and the low alternative log of four-period weighted average of real disposable income per capita.	Low	3-5 9-16
	Age-specific enrollment rates by sex are a function of dummy variables by age and the high alternative log of four-period weighted average of real disposable income per capita.	High	3-5 9-16
College enrollment, by sex, attendance status, level enrolled, and type of institution	For each group and for each attendance status separately, percent of total enrollment by sex, level enrolled, and type of institution will follow past trends through 2009. For each age group and attendance status category, the sum of the percentages must equal 100 percent.	High, middle, and low	3-5 9-16
College enrollment, by control of institution	For each enrollment category, by sex, attendance status, level enrolled, and type of institution, public enrollment as a percent of total enrollment will remain constant at levels consistent with the most recent rates.	High, middle, and low	3-5 9-16
Graduate enrollment	For each enrollment category, by sex and attendance status of student, and by type and control of institution, graduate enrollment as a percent of postbaccalaureate enrollment will remain constant at levels consistent with the most recent rates.	High, middle, and low	17
Full-time-equivalent of part-time enrollment	For each enrollment category, by type and control of institution and level enrolled, the percent that full-time-equivalent of part-time enrollment is of part-time enrollment will remain constant at levels consistent with the most recent rates.	High, middle, and low	23-25

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Table A1.14.—Enrollment (estimation methods)

Variables	Years	Estimation method	Tables
Enrollment in private elementary and secondary schools, by level	1988 1989 1990	Grade-by-grade data for private elementary, secondary, and combined schools were aggregated to estimate private school enrollment by grade level.	1 2
Enrollment in institutions of higher education, by age and attendance status	1989 1994 1997	For each sex, enrollment data from the Bureau of Census by individual ages and by attendance status for 2-year age groups were combined by assuming that within the 2-year age groups, age and attendance status were distributed independently. The resultant enrollment estimates by age and attendance status were then adjusted to NCES enrollment counts by attendance status.	6 7 8

Table A1.15—Number of years, projection methods, and smoothing constants used to project public school enrollments and high school graduates, by state

Projected state variable	Number of years (1970–1996)	Projection method	Smoothing constant	Choice of smoothing constant
Grade retention rates	27	Single exponential smoothing	0.4	Empirical research
Graduates/grade 12 enrollment	27	Single exponential smoothing	0.4	Empirical research

A2. High School Graduates

National

Projections of public high school graduates were developed in the following manner. The number of public high school graduates was expressed as a percent of grade 12 enrollment in public schools for 1972 to 1996. This percent was projected using single exponential smoothing and applied to projections of grade 12 enrollment to yield projections of high school graduates in public schools. (This percent does not make any specific assumptions regarding the dropout rate. The effect of the 12th grade dropout proportion is reflected implicitly in the graduate proportion.) The grade 12 enrollment was projected based on grade-by-grade retention rates. This percent was assumed to remain constant at levels consistent with the most recent rates. This method assumes that past trends in factors affecting graduation ratios, such as dropouts, migration, and public/private transfers will continue over the projection period. In addition to student behaviors, the projected number of graduates could be impacted by changes in policies affecting graduation requirements.

Projections of private high school graduates were derived in the following manner. From 1970–71 to 1996–97, the ratio of private high school graduates to public school graduates was calculated. These ratios were projected using single exponential smoothing, yielding a constant value over the projection period. This constant value was then applied to projections of public high school graduates to yield projections of private high school graduates. This method assumes that the future pattern of private high school graduates will be the same as that of public high school graduates. The reader should be aware that a number of factors could alter the assumption of a constant ratio over the projection period.

Projection Accuracy

An analysis of projections from models used in the past 15 editions of *Projections of Education Statistics* indicates that the mean absolute percentage errors (MAPEs) for projections of public high school graduates were 0.6 percent for 1 year ahead, 1.3 percent for 2 years ahead, 1.6 percent for 5 years ahead, and 3.8 percent for 10 years ahead. For the 2-year-ahead prediction, this means that one would expect the projection to be within 1.3 percent of the actual value, on the average.

State-Level

This edition contains projections of high school graduates from public schools by state from 1997–98 to 2008–09. Public school graduate data from the National Center for Education Statistics' Common Core of Data survey for 1969–70 to 1996–97 were used to develop these projections. This survey does not collect graduate data for private schools.

Projections of public high school graduates by state were developed in the following manner. For each state, the number of public high school graduates was expressed as a percent of grade 12 enrollment in public schools for 1970 to 1996. This percent was projected using single exponential smoothing and applied to projections of grade 12 enrollment to yield projections of high school graduates in public schools. Projections of grade 12 enrollment were developed based on the grade retention method discussed in section A1, Enrollment. This percent was assumed to remain constant at levels consistent with the most recent rates. This method assumes that past trends in factors affecting public high school graduates will continue over the projection period.

A3. Earned Degrees Conferred

Projections of associate's, bachelor's, master's, doctor's, and first-professional degrees by sex were based on demographic models that relate degree awards to college-age populations and college enrollment by level enrolled and attendance status.

Associate's Degrees

Associate's degree projections by sex were based on undergraduate enrollment by attendance status in 2-year institutions. Results of the regression analysis used to project associate degrees by sex are shown in table A3.1.

Bachelor's Degrees

Bachelor's degree projections by sex were based on the 18- to 24-year-old population and undergraduate enrollment by attendance status in 4-year institutions. Results of the regression analysis used to project bachelor's degrees by sex are shown in table A3.2.

Master's Degrees

Master's degree projections by sex were based on full-time graduate enrollment by sex. Results of the regression analysis used to project master's degrees by sex are shown in table A3.3.

Doctor's Degrees

Doctor's degree projections for men were based on full-time male graduate enrollment and the unemployment rate. Doctor's degree projections for women were based on the 35- to 44-year-old population of women and full-time female graduate enrollment. The results of the regression analysis used to project doctor's degrees by sex are shown in table A3.4.

First-Professional Degrees

First-professional degree projections by sex were based on first-professional enrollment by attendance status in 4-year institutions. Results of the regression analysis used to project first-professional degrees by sex are shown in table A3.5.

Methodological Tables

These tables describe equations used to calculate projections (tables A3.1 through A3.5), and basic assumptions underlying projections (table A3.6).

Projection Accuracy

An analysis of projection errors from similar models used in the past 13 editions of *Projections of Education Statistics* indicates that mean absolute percentage errors (MAPEs) for bachelor's degree projections were 2.1 percent for 1 year out, 3.1 percent for 2 years out, and 6.5 percent for 5 years out. For the 1-year-out prediction, this means that one would expect the projection to be within 2.1 percent of the actual value, on the average. For first-professional degrees, the MAPEs were 2.4, 3.3, and 4.6 percent, respectively. For doctor's degrees, based on the past 12 editions of *Projections of Education Statistics*, the MAPEs were 2.5, 4.1, and 9.7 percent, respectively. MAPEs for master's degrees, based on the past 11 editions of *Projections of Education Statistics*, were 2.0, 4.2, and 12.3, respectively. MAPEs for associate's degrees, based on the past nine editions of *Projections of Education Statistics*, were 2.3 percent for 1 year out, 3.5 percent for 2 years out, and 6.2 percent for 3 years out.

Table A3.1.—Equations for associate's degrees

	Equation			R^2	Durbin-Watson statistic[1]	Estimation technique
Men	ASSOCM	=	$107{,}301 + \underset{(1.3)}{59.4\mathrm{UGFTM2}} + \underset{(1.9)}{34.4\mathrm{UGPTM2}}$	0.79	1.6	AR1[2]
Women	ASSOCW	=	$21{,}188.6 + \underset{(17.5)}{266.3\mathrm{UGFTW2}}$	0.98	1.5	AR1[3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 indicates an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.67 with a t-statistic of 3.3. For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.62 with a t-statistic of 3.4.

Where:

ASSOCM =Number of associate's degrees awarded to men

ASSOCW =Number of associate's degrees awarded to women

UGFTM2 =Full-time male undergraduate enrollment in 2-year institutions lagged 2 years, in thousands

UGPTM2 =Part-time male undergraduate enrollment in 2-year institutions lagged 2 years, in thousands

UGFTW2 =Full-time female undergraduate enrollment in 2-year institutions lagged 2 years, in thousands

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1970–71 to 1995–96.

Table A3.2.—Equations for bachelor's degrees

			Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Men	BACHM	=	249,990 - 11.0P1824M + 169.9UGFT4M (-3.1) (5.3)	0.87	1.7	AR1 [2]
Women	BACHW	=	230,190 - 16.1P1824W + 227.5UGFT4W (-3.6) (17.2)	0.99	1.3	AR1 [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 indicates an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.63 with a t-statistic of 3.7. For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.73 with a t-statistic of 5.0.

Where:

BACHM =Number of bachelor's degrees awarded to men
BACHW =Number of bachelor's degrees awarded to women
P1824M =Population of 18- to 24-year-old men, in thousands

P1824W =Population of 18- to 24-year-old women, in thousands
UGFT4M =Full-time male undergraduate enrollment in 4-year institutions lagged 2 years, in thousands
UGFT4W =Full-time female undergraduate enrollment in 4-year institutions lagged 3 years, in thousands

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1970–71 to 1995–96.

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Table A3.3.—Equations for master's degrees

			Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Men	MASTM	=	39,120.0 + 388.0GFTM (4.2)	0.90	1.3	AR1 [2]
Women	MASTW	=	40,847.1 + 520.8GFTW (11.5)	0.99	1.0	AR1 [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 indicates an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.88 with a t-statistic of 10.6. For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] AR1 indicates an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.90 with a t-statistic of 12.3.

Where:

MASTM =Number of master's degrees awarded to men
MASTW =Number of master's degrees awarded to women
GFTM =Full-time male graduate enrollment, in thousands
GPTW =Full-time female graduate enrollment, in thousands

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equation for men is from 1970–71 to 1995–96. The time period of the equation for women is from 1972–73 to 1995–96.

Table A3.4.—Equations for doctor's degrees

			Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Men	DOCM	=	18,023.0 + 28.3GFTM - 36.4RUC (1.6) (-0.2)	0.91	1.0	AR1 [2]
Women	DOCW	=	-1,634.2 + 0.3P3544W + 35.1GFTW (2.3) (5.3)	0.99	2.1	AR1 [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 indicates an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.96 with a t-statistic of 24.3. For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] AR1 indicates an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.71 with a t-statistic of 3.6.

Where:

DOCM =Number of doctor's degrees awarded to men
DOCW =Number of doctor's degrees awarded to women
P3544W =Population of 35- to 44-year-old women, in thousands
GFTM =Full-time male graduate enrollment lagged one year, in thousands
GFTW =Full-time female graduate enrollment, in thousands
RUC =Unemployment rate

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equation for men is from 1970–71 to 1995–96. The time period of the equation for women is from 1972–73 to 1995–96.

Table A3.5.—Equations for first-professional degrees

			Equation	R² [2]	Durbin-Watson statistic [1]	Estimation technique
Men	FPROM	=	5,598.9 + 260.4FPFTM (8.3)	0.91	2.0	AR1 [2]
Women	FPROW	=	-1,429.2 + 290.3FPFTW + 209.7FPPTW (18.2) (1.5)	0.99	1.4	OLS [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 indicates an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.53 with a t-statistic of 2.7. For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] OLS means Ordinary Least Squares.

Where:

FPROM =Number of first-professional degrees awarded to men
FPROW =Number of first-professional degrees awarded to women
FPFTM =Full-time male first-professional enrollment lagged 2 years, in thousands
FPFTW =Full-time female first-professional enrollment lagged 1 year, in thousands
FPPTW =Part-time female first-professional enrollment lagged 2 years, in thousands

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1970–71 to 1995–96

Table A3.6.— Earned degrees conferred (assumptions)

Variables	Assumptions	Alternatives	Tables
Associate's degrees			
Men	The number of associate's degrees awarded to men is a linear function of full-time and part-time undergraduate enrollment in 2-year institutions lagged 2 years. This relationship will continue through 2008–09.	Middle	27
Women	The number of associate's degrees awarded to women is a linear function of full-time undergraduate enrollment in 2-year institutions lagged 2 years. This relationship will continue through 2008–09.	Middle	27
Bachelor's degrees			
Men	The number of bachelor's degrees awarded to men is a linear function of full-time undergraduate enrollment in 4-year institutions lagged 2 years and the 18- to 24-year-old population. This relationship will continue through 2008–09.	Middle	28
Women	The number of bachelor's degrees awarded to women is a linear function of full-time undergraduate enrollment in 4-year institutions lagged 3 years and the 18- to 24-year-old population. This relationship will continue through 2008–09.	Middle	28
Master's degrees			
Men	The number of master's degrees awarded to men is a linear function of full-time male graduate enrollment. This relationship will continue through 2008–09.	Middle	29
Women	The number of master's degrees awarded to women is a linear function of full-time female graduate enrollment. This relationship will continue through 2008–09.	Middle	29
Doctor's degrees			
Men	The number of doctor's degrees awarded to men is a linear function of full-time male graduate enrollment lagged one year and the unemployment rate. This relationship will continue through 2008–09.	Middle	30
Women	The number of doctor's degrees awarded to women is a linear function of the 35- to 44-year-old population and full-time femle graduate enrollment. This relationship will continue through 2008–09.	Middle	30
First-professional degrees			
Men	The number of first-professional degrees awarded to men is a linear function of full-time first-professional enrollment lagged 2 years. This relationship will continue through 2008–09.	Middle	31
Women	The number of first-professional degrees awarded to women is a linear function of full-time first-professional enrollment lagged 1 year and part-time first-professional enrollment lagged 2 years. This relationship will continue through 2008–09.	Middle	31

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A4. Classroom Teachers

Public Classroom Teachers

The number of public elementary and secondary classroom teachers was projected separately for the elementary and secondary levels. The elementary teachers were modeled as a function of local education revenue receipts from state sources per capita and elementary enrollment. Secondary teachers were modeled as a function of local education revenue receipts from state sources per capita (lagged 3 years) and secondary enrollment. Local education revenue receipts from state sources were in constant 1986–87 dollars. These models differ from those shown in *Projections of Education Statistics to 2008* because disposable income per capita is omitted from the equations.

The equations in this section should be viewed as forecasting rather than structural equations, as the limitations of time and available data precluded the building of a large-scale, structural teacher model. The particular equations shown were selected on the basis of their statistical properties, such as coefficients of determination (R^2s), the t-statistics of the coefficients, the Durbin-Watson statistic, and residual plots.

The multiple regression technique will yield good forecasting results only if the relationships that existed among the variables in the past continue throughout the projection period.

The public elementary classroom teacher model is:

$$\begin{aligned} ELTCH &= b_0 + b_1 SGRANT \\ &\quad + b_2 ELENR \end{aligned}$$

where:

ELTCH is the number of public elementary classroom teachers.

SGRANT is the level of education revenue receipts from state sources per capita in 1986–87 dollars; and

ELENR is the number of students enrolled in public elementary schools.

Each variable affects the number of teachers in the expected way. As the state spends more money on education and as enrollment increases, the number of elementary teachers hired increases.

The public secondary classroom teacher model is:

$$\begin{aligned} SCTCH &= b_0 + b_1 SGRANT3 \\ &\quad + b_2 SCENR \end{aligned}$$

where:

SCTCH is the number of public secondary classroom teachers;

SGRANT3 is the level of education revenue receipts from state sources per capita in 1986–87 dollars, lagged 3 years; and

SCENR is the number of students enrolled in public secondary schools.

Each variable affects the number of teachers in the expected way. As the state spends more money on education and as enrollment increases, the number of secondary teachers hired increases.

Table A4.1 summarizes the results for the elementary and secondary public teacher models.

Enrollment is by organizational level, not by grade level. Thus, secondary enrollment is not the same as grade 9–12 enrollment because some states count some grade 7 and 8 enrollment as secondary. Therefore, the distribution of the number of teachers is also by organizational level, not by grade span.

Private Classroom Teachers

Projections of private classroom teachers were derived in the following manner. For 1960 to 1995, the ratio of private school teachers to public school teachers was calculated by organizational level. These ratios were projected using single exponential smoothing, yielding a constant value over the projection period. This constant value was then applied to projections of public school teachers by organizational level to yield projections of private school teachers. This method assumes that the future pattern in the trend of private school teachers will be the same as that for public school teachers. The reader is cautioned that a number of factors could alter the assumption of constant ratios over the projection period.

The total number of public school teachers, enrollment by organizational level, and education revenue receipts from state sources used in these projections were from the Common Core of Data (CCD) survey conducted by NCES. The proportion of public school teachers by organizational level was taken from the National Education Association and then applied to the total number of teachers from CCD to produce the number of teachers by organizational level.

Disposable income was obtained from Standard and Poor's DRI and population data, used for per capita calculations, were from the Bureau of the Census.

Projection Accuracy

An analysis of projection errors from the past 15 editions of *Projections of Education Statistics* indicated that the mean absolute percentage errors (MAPEs) for projections of classroom teachers in public elementary and secondary schools were 0.9 percent for 1 year out, 1.1 percent for 2 years out, 2.2 percent for 5 years out, and 3.4 percent for 10 years out. For the 2-year-ahead prediction, this means that one would expect the projection to be within 1.1 percent of the actual value, on the average.

Table A4.1.—Equations for public elementary and secondary classroom teachers

			Equation	R^2	Durbin-Watson statistic[1]	Estimation technique
Elementary	ELTCH	=	213.3 + 1.4SGRANT + 0.02ELENR (4.8) (3.4)	0.99	1.5	AR1[2]
Secondary	SCTCH	=	103.5 + 1.5SGRANT3 + 0.03SCENR (10.3) (6.1)	0.94	1.4	AR1[3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 indicates an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.99 with a t-statistic of 59.2. For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. In this equation, rho is equal to 0.65 with a t-statistic of 3.9.

Where:

ELTCH =Number of public elementary classroom teachers, in thousands
SCTCH =Number of public secondary classroom teachers, in thousands
SGRANT =Education revenue receipts from state sources per capita
SGRANT3 =Education revenue receipts from state sources per capita lagged 3 years
ELENR =Number of students enrolled in public elementary schools, in thousands
SCENR =Number of students enrolled in public secondary schools, in thousands

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equation for elementary teachers is from 1960 to 1995. The time period used in the equation for secondary teachers is from 1965 to 1995.

A5. Expenditures of Public Elementary and Secondary Schools

Econometric techniques were used to produce the projections for current expenditures and average teacher salaries. The equations in this chapter should be viewed as forecasting equations rather than structural equations. The particular equations shown were selected on the basis of their statistical properties, such as coefficients of determination (R^2s), the t-statistics of the variables, the Durbin-Watson statistic, and residual plots. These econometric models will yield good forecasting results only if the relationships that existed among the variables in the past continue throughout the projection period.

The Elementary and Secondary School Current Expenditure Model

There has been a large body of work, both theoretical and empirical, on the demand for local public services such as education.* The elementary and secondary school current expenditure model is based on this work.

The model that is the basis for the elementary and secondary school current expenditure model has been called the median voter model. In brief, the theory states that spending for each public good in the community (in this case, education) reflects the preferences of the "median voter" in the community. This individual is identified as the voter in the community with the median income and median property value. Hence, the amount of spending in the community reflects the price of education facing the voter with the median income, as well as his income and tastes. There are competing models in which the level of spending reflects the choices of others in the community, such as the "bureaucrats." The median voter model was chosen as the basis of the elementary and secondary school current expenditure model as it has been the one most thoroughly studied.

There have been many empirical studies of the demand for education expenditures using the median voter model. In most instances, researchers have used cross-sectional data. The elementary and secondary school current expenditure model was built on the knowledge gained from these cross-sectional studies and was adapted from them for use in a time-series study.

In a median voter model, the demand for education expenditures is typically linked to four different types of variables: 1) measures of the income of the median voter; 2) measures of intergovernmental aid for education going indirectly to the median voter; 3) measures of the price to the median voter of providing one more dollar of education expenditures per pupil; and 4) any other variables that may affect one's tastes for education. The elementary and secondary school current expenditure model contains variables reflecting the first three types of variables. The model is:

$$\begin{aligned}\ln(\mathrm{CUREXP}) &= b_0 + b_1\ln(\mathrm{PCI}) + b_2\ln(\mathrm{SGRNT}) \\ &\quad + b_3\ln(\mathrm{ADAPOP})\end{aligned}$$

where:

ln indicates the natural log;

CUREXP equals current expenditures of public elementary and secondary schools per pupil in average daily attendance in constant 1982–84 dollars;

PCI equals disposable income per capita in constant 1992 dollars;

SGRNT equals local governments' education revenue receipts from state sources, per capita, in constant 1982–84 dollars; and

ADAPOP equals the ratio of average daily attendance to the population.

The model was estimated using the AR1 model for correcting for autocorrelation. This was done because the test statistics were significantly better than those from the ordinary least squares (OLS) estimation, and the Durbin-Watson statistic was in the inconclusive region when the model was estimated using OLS. This is the seventh edition of *Projections of Education Statistics* in which this method of estimation, rather than OLS, was used. Ordinary least squares was used in the previous four editions of *Projections of Education Statistics*. The sample period was from 1959–60 to 1995–96.

The projected values for current expenditures per pupil for the period from 1996–97 to 2008–09 are not the numbers which appear in table 34. For each scenario, the projected values for 1996–1997 and 1997–98 were from the NCES Early Estimates and the value for 1998–99 was calculated by applying the growth rate from 1996–97 to 1997–98 on the value for 1997–98. For the remaining years for each of the alternative scenarios, the projected percent changes produced by the model were then used to produce projections of current expenditures per pupil.

There are potential problems with using a model for local government education expenditures for the nation as a whole. Two such problems concern the variable SGRNT. First, the amount of money which local govern-

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*For a review and discussion of this literature, see Inman, R. P. (1979), "The fiscal performance of local governments: An Interpretive Review," in *Current Issues in Urban Economics*, edited by P. Mieszkowski and M. Straszheim, Johns Hopkins Press, Baltimore, Maryland.

ments receive for education from state governments varies substantially by state. Second, the formulas used to apportion state moneys for education among local governments vary by state.

Beginning in 1988–89, there was a major change in the survey form used to collect data on current expenditures. This new survey form produces a more complete measure of current expenditures; therefore, the values for current expenditures are not completely comparable to the previously collected numbers. In a crosswalk study, data for a majority of states were also collected for 1986–87 and 1987–88 that were comparable to data from the new survey form. A comparison of these data with those from the old survey form suggests that the use of the new survey form may have increased the national figure for current expenditures by approximately 1.4 percent over what it would have been if the survey form had not been changed. When the model was estimated, all values for current expenditures before 1988–89 were increased by 1.4 percent.

The results for the model are shown in table A5.1. Each variable affects current expenditures in the direction that would be expected. With high levels of income (PCI) or revenue receipts from state source (SGRNT), the level of spending increases. As the number of pupils increases relative to the population (that is, as ADAPOP increases), the level of spending per pupil falls.

From the cross-sectional studies of the demand for education expenditures, we have an estimate of how sensitive current expenditures are to changes in PCI and ADAPOP. We can compare the results from this model with those from the cross-sectional studies. For this model, an increase in PCI of 1 percent, with SGRNT and ADAPOP held constant, would result in an increase of current expenditures per pupil in average daily attendance of approximately 0.55 percent. With PCI and SGRNT held constant, an increase of 1 percent in ADAPOP would result in a decrease in current expenditures per pupil in average daily attendance of approximately 0.33 percent. Both numbers are well within the range of what has been found in cross-sectional studies.

The results from this model are not completely comparable with those from some of the previous editions of *Projections of Education Statistics*. First, as with the previous edition, the population number for each school year is the Bureau of the Census's July 1 population number for the upcoming school year. In earlier editions, each school year's population number was the average of an economic consulting firm's (either Standard and Poor's DRI or the WEFA Group) estimated population numbers of each quarter in that school year. Second, there have been changes in the definition of the disposable income.

Projections for total current expenditures were made by multiplying the projections for current expenditures per pupil in average daily attendance by projections for average daily attendance. The projections for total current expenditures were divided by projections for fall enrollment to produce projections of current expenditures per pupil in fall enrollment. Projections were developed in 1982–84 dollars and then placed in 1996–97 dollars using the Consumer Price Index. Current-dollar projections were produced by multiplying the constant-dollar projections by projections for the Consumer Price Index.

Three alternative sets of projections for current expenditures are presented: the middle alternative projections; the low alternative projections; and the high alternative projections. The alternative sets of projections differ because of varying assumptions about the growth paths for disposable income and revenue receipts from state sources.

The alternative sets of projections for the economic variables, including disposable income, were developed using variations of three economic scenarios prepared by Standard & Poor's DRI (DRI) for use on its U.S. Quarterly Model. The U.S. Quarterly model is an econometric model of the U.S. economy developed by DRI for the personal computer which projects more than 1,200 economic concepts. Periodically, DRI supplies alternative scenarios of the economy, including long-term scenarios. Users have the option of either producing projections directly from the scenarios supplied by DRI or first altering some of the underlying assumptions of the scenarios and then producing the projections. The February 1998 series of long-term scenarios was used as the base for the three sets of alternative economic projections used here, although there were some changes in the underlying assumptions.

DRI's trend scenario was used as a base for the middle alternative projections of the economic variables. DRI's trend scenario depicts a mean of possible paths that the economy could take over the forecast period, barring major shocks. The economy, in this scenario, evolves smoothly, without major fluctuations. The only change from DRI's trend scenario was that the most recent middle set of population projections as developed by the Bureau of the Census was substituted for DRI's population projections.

DRI's February 1998 pessimistic scenario was used as a base for the low alternative projections. As with the middle set of projections, the Bureau of the Census's recent middle set of population projections was substituted for DRI's population projections. For the low alternative projections, some changes were made in some of DRI's assumptions concerning personal income that resulted in lower projections for disposable income.

Similarly, DRI's February 1998 optimistic scenario was used as a base for the high alternative projections. The Bureau of the Census's recent middle set of population projections was substituted for DRI's population projections and some changes were made in some of DRI's assumptions concerning personal income that resulted in higher projections for disposable income.

DRI's U.S. Quarterly Model and their February 1998 long-term scenarios, were used to generate three sets of projections, the middle alternative projections, the low alternative projections, and the high alternative projections.

In the middle alternative projections, disposable income per capita rises each year from 1998–99 to 2008–09 at rates between 0.8 percent and 3.4 percent. In the low alternative projections, disposable income per capita ranges between 0.0 percent and 2.8 percent, and in the high alternative projections, disposable income per capita rises at rates between 1.4 percent and 4.1 percent.

The alternative projections for revenue receipts from state sources were produced using the following model:

$$\begin{aligned}\ln(\mathrm{SGRNT}) &= b_0 + b_1\ln(\mathrm{PERTAX1}) \\ &+ b_2\ln(\mathrm{ADAPOP}) \\ &+ b_3\ln(\mathrm{RCPIANN}/\mathrm{RCPIANN1})\end{aligned}$$

where:

ln indicates the natural log;

SGRNT equals local governments' education revenue receipts from state sources, per capita, in constant 1982–84 dollars;

PERTAX1 equals personal taxes and nontax receipts to state and local governments, per capita, in constant 1982–84 dollars lagged one period;

ADAPOP equals the ratio of average daily attendance to the population;

RCPIANN equals the inflation rate measured by the Consumer Price Index; and

RCPIANN1 equals the inflation rate measured by the Consumer Price Index lagged 1 period.

This equation was estimated using the AR1 model for correcting for autocorrelation. The sample period was from 1960–61 to 1995–96. These models are shown in table A5.1.

The values of the coefficients in this model follow expectations. As state governments receive more revenue (higher PERTAX1), they have more money to send to local governments for education. As the enrollment increases relative to the population (higher ADAPOP), so does the amount of aid going to education. Finally, in years with rapidly increasing inflation (higher RCPIANN/RCPIANN1), the real dollar values of revenue receipts from state governments to local governments would fall, other things being equal.

This is the third edition of the *Projections of Education Statistics* in which this model has been used to create projections of SGRNT. The model used in *Projections of Education Statistics to 2006* was identical to the model used in this edition except that it contained a second measure of state and local government revenue. In earlier editions, similar models were used except the variables were not in log form.

Three alternative sets of projections for SGRNT were produced using this model. Each is based on a different set of projections for personal taxes and the rate of change in the inflation rate. The middle set of projections was produced using the values from the middle set of alternative projections. The low set of projections was produced using the values from the low set of alternative projections and the high set of projections was produced using the values from the high set of alternative projections. In the middle set of projections, personal taxes and nontax receipts increase at rates between -2.3 percent and 2.3 percent. In the low set of projections, personal taxes and nontax receipts increase at rates between -3.0 percent and 0.7 percent. In the high set of projections, personal taxes and nontax receipts increase at rates between -1.5 percent and 4.4 percent.

The projected values for revenue receipts from state sources for 1997–98 and 1998–99 are not the numbers which appear in table B7 and which were used in the production of the projections of current expenditures per pupil. Rather, alternative sets of projections were calculated by dividing the differences between the 1996–97 and 1999–2000 projections by three and adding those values to the 1996–97 values to produce projected values for 1997–98 and then adding those values again to new 1997–98 projections to produce new projections for 1998–99. This produced a smoother growth path for revenue receipts from state sources.

In the middle set of projections, revenue receipts from state sources increase at rates between 0.0 percent and 1.6 percent for the period from 1998–99 to 2008–09. In the low set of projections, they increase at rates between -0.6 percent and 1.0 percent. In the high set of projections, they increase at rates between -0.3 percent and 3.2 percent.

The Elementary and Secondary Teacher Salary Model

Most studies conducted on teacher salaries, like those on current expenditures, have used cross-sectional data. Unlike current expenditures models, however, the models for teacher salaries from these existing cross-sectional studies cannot easily be reformulated for use with time-series data. One problem is that we do not have sufficient information concerning the supply of qualified teachers who are not presently teaching. Instead, the elementary and secondary salary model contains terms that measure the demand for teachers in the economy.

The elementary and secondary teacher salary model is:

$$\begin{aligned}\ln(\mathrm{SALRY}) &= b_0 + b_1\ln(\mathrm{CUREXP}) + b_2\ln(\mathrm{ADAPOP}) \\ &+ b_3\ln(\mathrm{ADA1}/\mathrm{ADA2})\end{aligned}$$

where:

ln indicates the natural log;

SALRY equals the estimated average annual salary of teachers in public elementary and secondary schools in constant 1982–84 dollars;

CUREXP equals current expenditures of public elementary and secondary schools per pupil in average daily attendance in constant 1982–84 dollars;

ADAPOP equals the ratio of average daily attendance to the population;

ADA1 equals the average daily attendance lagged 1 period; and

ADA2 equals the average daily attendance lagged 2 periods.

The model was estimated using the period from 1959–60 to 1995–96 as a sample period. The AR1 model for correcting for autocorrelation was used as the Durbin-Watson statistic was in the inconclusive region when the model was estimated using OLS.

While there are values for teacher salaries through 1997–98, the model was estimated using the period from 1959–60 to 1995–96 as there are values for current expenditures only through 1995–96. The actual values for teacher salaries for 1996–97 and 1997–98, not those estimated using the model, appear in table 36. The projected values for teacher salaries for the projection period from 1998–99 to 2008–09 also are not the numbers which appear in table 36. Rather, three new sets of projections for teacher salaries were calculated using the projected percent changes produced by the model.

Due to the effects on current expenditures caused by the change in survey forms discussed above, the values for current expenditures for 1959–60 to 1987–88 were increased by 1.4 percent when the salary model was estimated. The coefficients of the salary model are different than if the unadjusted numbers for current expenditures had been used and hence the forecasts are different.

The results for this model are also shown in table A5.1. There is no literature for comparing the sizes of the coefficients. However, the direction of the impact each variable has on salaries is as expected: as the level of spending per pupil increases (higher CUREXP), more teachers can be hired, so demand for teachers increases and salaries may increase; as the number of students increases (higher ADAPOP and ADA1/ADA2), demand for teachers may increase, so salaries may increase.

This model was also used to produce the projections of teacher salaries presented in the *Projections of Education Statistics to 2008*, *Projections of Education Statistics to 2007* and the *Projections of Education Statistics to 2006*. In seven earlier editions, similar models were used except the variables were not in log form.

As with current expenditures, three different scenarios are presented for teacher salaries. The same projections for ADAPOP and ADA are used for each alternative projection; the sole difference between the projections is in the projection for current expenditures. The middle alternative projection for salaries uses the middle alternative projection for current expenditures. The low alternative projection for salaries uses the low alternative projection for current expenditures. The high alternative projection for salaries uses the high alternative projection for current expenditures.

Current expenditures, average teacher salaries, and the number of teachers are interrelated; analysis was conducted to see whether the projections of these three time series were consistent.

The number of teachers was multiplied by the average salary and then divided by current expenditures for every school year from 1983–84 until 2008–09 (using the middle alternative projection for teachers, salaries, and current expenditures). The resulting value shows the portion of current expenditures that is spent on teacher salaries. The portion of current expenditures that goes toward teacher salaries has been in a slow downward trend, with the teacher salary share falling from 41 percent in 1983–84 to 38 percent in 1995–96. With the projected values, the portion of current expenditures that go toward teacher salaries continues to fall slowly, falling to 33 percent in 2008–09. The results of this analysis indicate that the projections of these three time series are consistent.

Projection Accuracy

This is the eleventh consecutive year in which *Projections of Education Statistics* has contained projections of current expenditures and teacher salaries. The actual values of current expenditures and teacher salaries can be compared with the projected values in the previous editions to examine the accuracy of the models.

The projections from the various editions of *Projections of Education Statistics* were placed in 1981–82 dollars using the Consumer Price Indices that appeared in each edition.

The same set of independent variables has been used in the production of the current expenditure projections presented in the last eleven editions of the *Projections of Education Statistics* including this one. There have been some differences in the construction of the variables however. First, with the *Projections of Education Statistics to 1997-98*, calendar year data were used for disposable income, the population, and the Consumer Price Index. With the later editions, school year data were used. Second, there have been two revisions in the disposable income time series. Third, there have been two changes to the population variable. In the more recent editions, including this one, the Census Bureau's July 1 number for the population has been used. In the earlier editions, an average of the quarterly values was used. Also in the more recent editions, the U.S. Bureau of the Census's population projections have been used. In the earlier editions, the population projections came from an economic consulting firm, either DRI or the WEFA Group.

There has also been a change in the estimation procedure. In the more recent editions, the AR1 model for correcting for autocorrelation was used to estimate the model. In the earlier editions, ordinary least squares was used to estimate the model.

There are several commonly used statistics which can be used to evaluate projections. The values for one of these, the mean absolute percentage error (MAPE), are presented in table A5.2. MAPEs are presented for total current expenditures, current expenditures per pupil in average daily attendance, and teacher salaries.

To calculate the MAPEs presented in table A5.2, the projections of each variable were first grouped by lead time, that is: all the projections of each variable that were a given number of years from the last year in the sample period were grouped together. Next, the percent differences between each projection and its actual value were calculated. Finally, for each variable, the mean of the absolute values of the percent differences were calculated, with a separate average for each lead time. These means are the MAPEs. Hence, in table A5.2, there are a series of MAPEs for each variable with a different MAPE for each lead time.

For some editions of the *Projections of Education Statistics*, the first projection to be listed did not have a lead time of one year. For example, in *Projections of Education Statistics to 2002*, the first projection to appear was for 1990–91. This projection was calculated using a sample period ending in 1988–89, so it had a lead time of two years. The value that appeared for 1989–1990 was from NCES *Early Estimates*. Only those projections which appeared in an edition of *Projections of Education Statistics* were used in this evaluation.

Some of the differences between the actual values and the projected values for current expenditures and current expenditures per pupil are due to the change in the survey form for current expenditures that took place in 1988–89. The results of the crosswalk study suggest that values for current expenditures as presently collected are approximately 1.4 percent higher than they would have been if no change had been made. If the projections for 1988–89, 1989–90, and 1990–91 which appeared in *Projections of Education Statistics to 1997–98*, *Projections of Education Statistics to 2000*, *Projections of Education Statistics to 2001: An Update*, are increased by 1.4 percent, some MAPEs decrease. MAPEs for current expenditures and current expenditures per pupil after this adjustment has been made can also be found in table A5.2.

Projections for teacher salaries also appeared in the ten most recent editions of *Projections of Education Statistics*. Beginning with the *Projections of Education Statistics to 2006*, there was one major change in the model used for teacher salary projections; all the variables were placed in log form. With this change in functional form, there was also a change in the way the change in enrollment was measured. In the most recent editions, the change in enrollment was measured by taking the ratio of the average daily attendance lagged one period to the average daily attendance lagged two periods. In the previous three editions of *Projections of Education Statistics*, the change in enrollment was measured by the change from the previous year in average daily attendance lagged one period. In *Projections of Education Statistics to 1997-98*, *Projections of Education Statistics to 2000*, and *Projections of Education Statistics to 2001*, both the change in average daily attendance lagged one period and the change in average daily attendance lagged two periods were included in the model.

There was another difference between the model used to produce the teacher salary projections in *Projections of Education Statistics to 1997–98* and those used in the later editions including this one: variables in the model were calculated using calendar year data for the population and the Consumer Price Index rather than school year data as in previous editions.

Sources of Past and Projected Data

Numbers from several different sources were used to produce these projections. In some instances, the time series used were made by either combining numbers from various sources or manipulating the available numbers. The sources and the methods of manipulation are described here.

The time series used for current expenditures was compiled from several different sources. For the school years ending in even numbers from 1959–60 to 1975–76, the numbers for current expenditures were taken from various issues of *Statistics of State School Systems*, published by NCES. The numbers for the school years ending in odd numbers during the 1960s were taken from various issues of the National Education Association's *Estimates of School Statistics*. For the school years ending in odd numbers during the 1970s, up to and including 1976–77, the numbers were taken from various issues of *Revenues and Expenditures for Public Elementary and Secondary Education*, published by NCES. For the school years from 1977–78 until 1995–96, the numbers were taken from the NCES Common Core of Data survey and unpublished data.

For 1974–75 and 1976–77, expenditures for summer schools were subtracted from the published figures for current expenditures. The value for 1972–73 was the sum of current expenditures at the local level, expenditures for administration by state boards of education and state departments of education, and expenditures for administration by intermediate administrative units.

Note that although the data from the different sources are similar, they are not entirely consistent. Also, the NCES numbers beginning with 1980–81 are not entirely consistent with the earlier NCES numbers, due to differing treatments of items such as expenditures for administration by state governments and expenditures for community services.

An alternative source for current expenditures would have been the Bureau of the Census's F-33 which offers statistics at the district level. This level of detail was not needed, however.

For most years, the sources for the past values of average daily attendance were identical to the sources for current expenditures. For 1978–79, the number was taken from *Revenues and Expenditures for Public Elementary and Secondary Education*.

Projections for average daily attendance for the period from 1995–96 to 2008–09 were made by multiplying the projections for enrollment by the average value of the ratios of average daily attendance to the enrollment from 1986–87 to 1997–98; this average value was approximately 0.93.

The values for fall enrollment from 1959–60 to 1977–78 were taken from issues of the NCES publication *Statistics of Public Elementary and Secondary Schools*. The 1978–79 value was taken from the *NCES Bulletin* of October 23, 1979, "Selected Public and Private Elementary and Secondary Education Statistics." The values from 1979–80 to 1996–97 were taken from the NCES Common Core of Data survey. The projections for fall enrollment are those presented in Chapter 1.

For 1959–60 to 1995–96, the sources for revenue receipts from state sources were the two NCES publications *Statistics of State School Systems* and *Revenues and Expenditures for Public Elementary and Secondary Education* and the NCES Common Core of Data survey. The methods for producing the alternative projections for revenue receipts from state sources are outlined above.

The estimates for average teacher salaries were taken from various issues of the National Education Association's *Estimates of School Statistics*.

The projected values for disposable income, personal taxes and nontax receipts to state and local governments, and indirect business taxes and tax accruals to state and local governments, were developed using projections developed by DRI's U.S. Quarterly Model. Projected values of the Bureau of Labor Statistics' Consumer Price Index for all urban consumers, which was used for adjusting current expenditures, teacher salaries, revenue receipts from state sources, and the state revenue variables, were also developed using the U.S. Quarterly Model.

Both the historical and projected values for the population were supplied by the U.S. Bureau of the Census.

The values of all the variables from DRI were placed in school-year terms. The school-year numbers were calculated by taking the average of the last two quarters of one year and the first two quarters of the next year.

The Elementary and Secondary School Price Index was considered as a replacement for the Consumer Price Index for placing current expenditures and teacher salaries in constant dollars. As projections of the price index are required for placing the forecasts into current dollars, and as there are no projections of the Elementary and Secondary School Price Index, the Consumer Price Index was used. There are other price indexes, such as the implicit price deflator for state and local government purchases, that could have been used instead of the Consumer Price Index. These alternatives would have produced somewhat different projections.

Table A5.1.—Equations for current expenditures per pupil in average daily attendance, estimated average annual salaries of teachers, and education revenue receipts from state sources

Dependent variable	Equation	$\bar{R}^2$	Durbin-Watson statistic	Estimation technique [*]	Rho
Current expenditures per pupil	ln(CUREXP) = - 1.090 + 0.519ln(PCI) + 0.628ln(SGRNT) (-0.96) (2.46) (4.91) - 0.352ln(ADAPOP) (-2.76)	0.997	1.829	AR1	0.420 (2.47)
Estimated average salaries salaries	ln(SALRY) = 7.60 + 0.45ln(CUREXP) + 0.68ln(ADAPOP) (33.5) (12.12) (5.85) + 1.201n(ADA1/ADA2) (3.58)	0.982	1.511	AR1	0.833 (7.74)
Education revenue receipts from state sources per capita	ln(SGRNT) = 2.4 + 0.70ln(PERTAX1) + 0.48ln(ADAPOP) (21.1) (29.9) (4.77) - 0.03ln(RCPIANN/RCPIANN1) (-1.91)	0.992	1.982	AR1	.420 (2.56)

[*] AR1 is an estimation procedure for correcting the problem of first-order autocorrelation. For a general discussion of the problem of autocorrelation, and the methods to correct it, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, chapter 8. For a discussion of the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315–318.

Where:

ln indicates the natural log
CUREXP =Current expenditures of public elementary and secondary schools per pupil in average daily attendance in constant 1982–84 dollars
SALRY =Estimated average annual salary of teachers in public elementary and secondary schools in constant 1982–84 dollars
SGRNT =Local governments' education revenue receipts from state sources, per capita, in constant 1982–84 dollars
PCI =Disposable income per capita in constant 1992 dollars
ADAPOP =Ratio of average daily attendance to the population
PERTAX1 =Personal taxes and nontax receipts to state and local governments, per capita, in constant 1982–84 dollars lagged one period
RCPIANN =Inflation rate measured by the Consumer Price Index
RCPIANN1 =Inflation rate measured by the Consumer Price Index lagged 1 period
ADA1 =Average daily attendance lagged 1 period
ADA2 =Average daily attendance lagged 2 periods

NOTES: The time period of observations used in the equation for revenue receipts from state sources is from 1960–61 to 1995–96. The time period of observations used in the equations for current expenditures and teacher salaries is from 1959–60 to 1995–96. Numbers in parentheses are t-statistics. $\bar{R}^2$ = Coefficient of determination, adjusted for degrees of freedom. For an explanation of the Durbin-Watson statistic, see J. Johnston, (1972), pages 251–252. Rho is the first order autocorrelation coefficient estimated when AR1 is used. (This table was prepared November 1998.)

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Table A5.2.—Mean absolute percentage errors by lead time for current expenditures, current expenditures per pupil in average daily attendance (ADA), and estimated salaries of classroom teachers in public elementary and secondary schools

Lead Time (years)	Mean absolute percentage errors				
	Current expenditures		Current expenditures - Adjusted [1]		Estimated average annual salaries
	Total	Per pupil in ADA	Total	Per pupil in ADA	
One	1.3%	1.1%	0.9%	0.8%	1.3%
Two	2.1%	1.4%	1.6%	1.1%	1.6%
Three	2.1%	1.8%	1.8%	1.6%	2.2%
Four	2.0%	2.0%	1.9%	2.2%	4.5%
Five	2.8%	3.3%	3.3%	4.0%	7.4%
Six	3.7%	4.6%	4.6%	5.5%	10.1%
Seven	3.6%	5.3%	4.7%	6.4%	12.4%
Eight	2.7%	4.9%	4.1%	6.4%	14.1%
Nine	5.1%	7.3%	6.6%	8.8%	15.3%
Ten	—	—	—	—	16.0%

[1] Values for current expenditures and current fund expenditures per pupil in average daily attendance from *Projections of Education Statistics to 1997–98*, *Projections of Education Statistics to 2000*, and *Projections of Education Statistics to 2001: An Update* were increased by 1.4 percent to compensate for the change in the survey for current expenditures which occurred in 1988–89.

—The actual value of current expenditures was not available to calculate mean absolute percentage errors of lead times of ten years.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics*, various issues. (This table was prepared September 1998.)

A6. Expenditures of Institutions of Higher Education

One current-fund expenditure model and one educational and general expenditure model were estimated for each of three types of higher education institutions—public 4-year; public 2-year; and private 4-year. In each case, econometric techniques were used. Due to the lack of a consistent database for private 2-year schools, the last actual values, for 1994–95, were used as constants. These values for private 2-year schools were used in the tables for expenditures in all institutions (tables 37 and 38.)

The higher education econometric models were selected on the basis of their statistical properties, such as the coefficients of determination (R^2), the t-statistics of the variables, the Durbin-Watson statistic, and residual plots. These econometric models will yield good forecasting results only if the relationships that existed among the variables in the past continue throughout the projection period.

Higher Education Institutions Expenditure Models

Similar econometric models were developed for the three types of institutions. While there has been significantly less work by economists studying the factors influencing higher education finance data than those influencing elementary and secondary finance data, there have been some valuable studies. This body of work was used in building these models.

In Chapter 7, some of the factors that are historically associated with the level of expenditures are discussed. These are: (1) the state of the economy; (2) the inflation rate; and (3) enrollments. Each of the models presented here contains variables measuring at least two of these three factors. Either disposable income per capita or revenues of state and local governments per capita was used to measure the state of the economy. Two measures of the inflation rate were considered: the rate of change in the inflation rate; or a dummy for years with inflation rates greater than 8 percent. In each equation, an enrollment variable was included.

For each dependent variable, a number of alternative specifications were examined. In each case, the choice of the final specification was made after considering such factors as the coefficients of determination, the t-statistics of the variables, residual plots, and ex-post mean absolute percent errors. The final specification of each model has the dependent variables and some of the independent variables as first differences.

The Public 4-Year Institutions Expenditure Models

The public 4-year institutions current-fund expenditure model is:

$$\begin{aligned} \text{DPUTCUR4} &= b_0 + b_1\text{DSTREV1} + b_2\text{DPUFTE4} \\ &\quad + b_3\text{DUMMY} \end{aligned}$$

where:

DPUTCUR4 is the change from the previous year in current-fund expenditures per student in full-time-equivalent (FTE) enrollment in public 4-year institutions in constant 1982–84 dollars;

DSTREV1 is the change from the previous year in the sum of personal tax and nontax receipts to state and local governments and indirect business taxes and tax accruals, excluding property taxes, to state and local governments, per capita, in constant 1982–84 dollars lagged one year;

DPUFTE4 is the change from the previous year in FTE enrollment in public 4-year institutions in thousands of students; and

DUMMY is a dummy variable equaling 1 when the inflation rate is greater than 8 percent and 0 otherwise.

This model and the other econometric models were estimated using a sample period from 1968–69 to 1995–96. Ordinary least squares was used to estimate all the public institution models.

The results for this model are in table A6.1. Each variable affects current-fund expenditures in a logical fashion. The more revenues that state and local governments receive, the more expenditures they can make for public institutions of higher education. In a year with high inflation (DUMMY equals 1), current-fund expenditures in constant dollars are lower than they would have been otherwise. The more students in public 4-year institutions, the less money to be spent per student.

Three projections were produced: the middle alternative set of projections, the low alternative set of projections, and the high alternative set of projections. Each set of projections was based on a different set of assumptions for the revenues of state and local governments per capita. The projections for revenues of state and local governments per capita and the other economic variables used to produce the higher education expenditure projections were produced using the U.S. Quarterly Model of Standard & Poor's

DRI (DRI). The development of these alternative sets of projections is discussed in Appendix A5.

In the middle set of alternative projections, the revenues of state and local governments per capita increase at rates between -1.0 percent and 1.9 percent. In the low set of alternative projections, the revenues of state and local governments per capita increase at rates between -1.6 percent and 0.8 percent. In the high set of alternative projections, the revenues of state and local governments per capita increase at rates between -0.3 percent and 3.4 percent.

Projections for total current-fund expenditures were made by multiplying the projections for current-fund expenditures per student in FTE enrollment by projections for FTE enrollment. Projections were developed in 1982–84 dollars and then placed in 1996–97 dollars using projections for the Consumer Price Index. Current dollar projections were produced by multiplying the constant dollar projections by projections for the Consumer Price Index. All the higher education total expenditure projections, all expenditure projections in 1996–97 dollars, and all the current dollar projections were calculated in similar fashion.

A model for educational and general expenditures of public 4-year institutions was developed using the same variables as the current-fund expenditure model. The model is:

$$\text{DPUED4} = b_0 + b_1\text{DSTREV1} + b_2\text{DPUFTE4} + b_3\text{DUMMY}$$

where:

DPUED4 is the change from the previous year in educational and general expenditures per student in FTE enrollment in public 4-year institutions in constant 1982–84 dollars.

This model is also shown in table A6.1.

As with current-fund expenditures, each variable affects expenditures in the expected way.

The Public 2-Year Institutions Expenditure Models

The public 2-year institutions current-fund expenditure model has a form similar to the public 4-year institutions current-fund expenditure model except that the public 2-year institutions model does not contain any inflation variables. The model is:

$$\text{DPUTCUR2} = b_0 + b_1\text{DSTREV1} + b_2\text{DPUFTE2}$$

where:

DPUTCUR2 is the change from the previous year in current-fund expenditures per student in FTE enrollment in public 2-year institutions in constant 1982–84 dollars; and

DPUFTE2 is the change from the previous year in FTE enrollment in public 2-year institutions in thousands of students.

The results for this model are in table A6.1. Again, DSTREV1 has the expected positive effect on expenditures and the FTE enrollment variable has the expected negative impact.

The public 2-year institutions educational and general expenditure model is virtually identical to its current-fund expenditures counterpart. It is:

$$\text{DPUED2} = b_0 + b_1\text{DSTREV1} + b_2\text{DPUFTE2}$$

where:

DPUED2 is the change from the previous year in educational and general expenditures per student in FTE enrollment in public 2-year institutions in constant 1982–84 dollars.

The results of this model appear in table A6.1.

The Private 4-Year Institutions Expenditure Models

The private 4-year institutions current-fund expenditure model is:

$$\text{DPRTCUR4} = b_0 + b_1\text{DPCI} + b_2\text{DPRFTE4} + b_3\text{ININCR}$$

where:

DPRTCUR4 is the change from the previous year in current-fund expenditures per student in FTE enrollment in private 4-year institutions in constant 1982–84 dollars;

DPCI is the change from the previous year in disposable income per capita in 1992 dollars;

DPRFTE4 is the change from the previous year in FTE enrollment in private 4-year institutions to the population in thousands; and

ININCR is the rate of change in the inflation rate measured by the Consumer Price Index.

The model was estimated using the AR1 method for correcting for autocorrelation.

The three alternative sets of projections for current-fund expenditures were produced using varying assumptions about the growth paths for disposable income and the rate of change in the inflation rate measured by the Consumer Price Index. These disposable income and inflation rate projections were also developed using the DRI's U.S. Quarterly Model.

In the middle set of projections, disposable income per capita rises each year from 1998–99 to 2008–09 at rates between 0.8 percent and 3.4 percent. In the low set of projections, disposable income per capita increases at rates between 0.0 percent and 2.8 percent. In the high set of projections, disposable income per capita increases at rates between 1.4 percent and 4.1 percent.

In the middle set of projections, the inflation rate varies between 2.1 percent and 3.5 percent. In low set of projections, it varies between 3.2 percent and 5.0 percent, and in the high set of projections, it varies between 1.3 percent and 2.4 percent.

The private 4-year institutions educational and general expenditure model is:

$$\begin{aligned} \text{DPRIED4} \quad &= b_0 + b_1\text{DPCI} + b_2\text{DPRFTE4} \\ &\quad + b_3\text{ININCR} \end{aligned}$$

where:

DPRIED4 is the change in educational and general expenditures per student in FTE enrollment in private 4-year institutions in constant 1982–84 dollars.

The results of this model appear in table A6.1.

The Private 2-Year Institutions Expenditure Models

Unlike the other higher education variables, econometric methods were not used for either private 2-year current-fund expenditures or private 2-year educational and general expenditures. This was due to a change in the sample universe for private 2-year institutions. The period for which the private 2-year universe is relatively consistent, from 1982–83 to 1995–96, has only fourteen observations. This is too short a period for econometric techniques, so another means of projecting private 2-year institution expenditures was required. To compute national totals for all institutions despite this deficiency, another method of estimation was used. Both current-fund expenditures per student and educational and general expenditures per student were assumed to stay constant at the last year for which there are data, 1994–95. These values for private 2-year schools were used in the tables for expenditures in all institutions (tables 37 and 38.)

Projection Accuracy

This is the eighth time in the past eleven years that *Projections of Education Statistics* has contained projections of higher education expenditure data. The other seven editions were the *Projections of Education Statistics to 2008, Projections of Education Statistics to 2007, Projections of Education Statistics to 2006, Projections of Education Statistics to 2005, Projections of Education Statistics to 2004, Projections of Education Statistics to 2003* and *Projections of Education Statistics to 2000*. The projections that appeared in the six most recent editions of *Projections of Education Statistics* were developed using the same methodology as that presented here. Those that appeared in *Projections of Education Statistics to 2000* were produced using different models.

There are several commonly used statistics which can be used to evaluate projections. The values for one of these, the mean absolute percentage error (MAPE), are presented in table A6.2. MAPEs are presented for current-fund expenditures and for educational and general expenditures by several different breakdowns. Two alternative sets of MAPEs are presented: with one set, the projections from the last six editions of the *Projections of Education Statistics* were used in the calculations; with the other, the projections from the *Projections of Education Statistics to 2000* were also included.

To calculate the MAPEs presented in table A6.2, the projections of each variable were first grouped by lead time, that is: all the projections of each variable that were a given number of years from the last year in the sample period were grouped together. Next, the percent differences between each projection and its actual value were calculated. Finally, for each variable, the mean of the absolute values of the percent differences were calculated, with a separate average for each lead time. These means are the MAPEs of each variable for each lead time which are presented in table A6.2.

Sources of Data

The current-fund expenditure data and the educational and general expenditure data are from the "Financial Statistics of Institutions of Higher Education" and the Integrated Postsecondary Education Data System (IPEDS) "Finance" surveys of the National Center for Education Statistics (NCES). One manipulation of the educational and general expenditures numbers was required. From 1968–69 to 1973–74, student-aid expenditures were a separate component of current-fund expenditures. From 1974–75 on, scholarships and fellowships have been a component of educational and general expenditures. Hence, for the period 1968–69 to 1973–74, student aid was added to the published numbers for educational and general expenditures.

The full-time-equivalent (FTE) enrollment data are from the "Fall Enrollment in Colleges and Universities" surveys of NCES. The FTE enrollment figures for 1968–69, 1969–70, and 1970–71 were estimated using part-time and full-time enrollment data. Full-time-equivalent enrollment was derived by adding one-third of the part-time students to the number of full-time students for those three years.

The projected values for disposable income and the revenues of state and local governments per capita were developed using the DRI's U.S. Quarterly Model. Projected values of the Bureau of Labor Statistics' Consumer Price Index for all urban consumers, which were used for adjusting the higher education finance data, and the implicit price deflator for personal consumption expenditures, which was used for adjusting disposable income per capita, were also developed using the U.S. Quarterly Model. DRI supplied the historic values for these variables.

Both the historical and projected values for the population were supplied by the U.S. Bureau of the Census.

The Higher Education Price Index was considered as a replacement for the Consumer Price Index for placing the higher education expenditures in constant dollars. As projections of the price index are required for placing the forecasts into current dollars, and as there are no projections of the Higher Education Price Index, the Consumer Price Index was used.

The values of all of the variables from DRI were placed in academic-year terms. The data were available in quarterly format so the academic-year numbers were calculated by taking the average of the last 2 quarters of 1 year with the first 2 of the next year.

Table A6.1.—Equations for current-fund expenditures per student in full-time-equivalent enrollment and educational and general expenditures per student in full-time-equivalent enrollment in public 4-year institutions, public 2-year institutions, and private 4-year institutions

Dependent variable		Equation	$\bar{R}^2$	Durbin-Watson statistic	Estimation technique[1]	Rho
Current-fund expenditures per student in public 4-year institutions	DPUTCUR4	= 255 + 2.45DSTREV1 - 0.002DPUFTE4 (5.13) (2.36) (-5.55) - 214DUMMY (-3.12)	0.671	1.88	OLS	
Current-fund expenditures per student in public 2-year institutions	DPUTCUR2	= 21.1 + 3.37DSTREV1 - 0.001DPUFTE2 (0.76) (5.08) (-4.75)	0.742	2.17	OLS	
Current-fund expenditures per student in private 4-year institutions	DPRTCUR4	= 452 + 0.30DPCI - 0.009DPRFTE4 (3.86) (2.23) (-6.31) - 487.2ININCR (-5.84)	0.765	1.91	AR1	0.73 (5.14)
Educational and general expenditures per student in public 4-year institutions	DPUED4	= 212 + 2.16DSTREV1 - 0.002DPUFTE4 (4.14) (2.15) (-6.14) - 208DUMMY (-3.15)	0.692	1.64	OLS	
Educational and general expenditures per student in public 2-year institutions	DPUED2	= 14.3 + 3.48DSTREV1 - 0.0006DPUFTE2 (0.46) (4.78) (-3.57)	0.675	1.85	OLS	
Educational and general expenditures per student in private 4-year institutions	DPRIED4	= 205.0 + 0.32DPCI - 0.004DPRFTE4 (1.74) (1.60) (-2.11) - 433.6ININCR (-3.5)	0.474	2.30	AR1	0.55 (3.01)

[1] OLS = Ordinary Least Squares. AR1 is an estimation procedure for correcting the problem of first-order autocorrelation. For a general discussion of the problem of autocorrelation, and the methods to correct it, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, chapter 8. For a discussion of the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315–318.

Where:

DPUTCUR4 =Change from the previous year in current-fund expenditures per student in full-time-equivalent (FTE) enrollment in public 4-year institutions in constant 1982–84 dollars
DPUTCUR2 =Change from the previous year in current-fund expenditures per student in FTE enrollment in public 2-year institutions in constant 1982–84 dollars
DPRTCUR4 =Change from the previous year in current-fund expenditures per student in FTE enrollment in private 4-year institutions in constant 1982–84 dollars
DPUED4 =Change from the previous year in educational and general expenditures per student in FTE enrollment in public 4-year institutions in constant 1982–84 dollars
DPUED2 =Change from the previous year in educational and general expenditures per student in FTE enrollment in public 2-year institutions in constant 1982–84 dollars
DPRIED4 =Change in educational and general expenditures per student in FTE enrollment in private 4-year institutions in constant 1982–84 dollars
DSTREV1 =Change from the previous year in the sum of personal tax and nontax receipts to state and local governments and indirect business taxes and tax accruals, excluding property taxes, to state and local governments, per capita, in constant 1982–84 dollars lagged one year
DPCI =Change from the previous year in disposable income per capita in 1992 dollars
DPUFTE4 =Change from the previous year in FTE enrollment in public 4-year institutions in thousands of students
DPUFTE2 =Change from the previous year in FTE enrollment in public 2-year institutions in thousands of students
DPRFTE4 =Change from the previous year in FTE enrollment in private 4-year institutions to the population in thousands
DUMMY =Dummy variable equaling 1 when the inflation rate is greater than 8 percent and 0 otherwise
ININCR =Rate of change in the inflation rate measured by the Consumer Price Index

NOTES: The time period of observations used in the equations is from 1968–69 to 1995–96. Numbers in parentheses are t-statistics. $\bar{R}^2$ = Coefficient of determination, adjusted for degrees of freedom. For an explanation of the Durbin-Watson statistic, see J. Johnston, (1972), pages 251–252. Rho is the first order autocorrelation coefficient estimated when AR1 is used. (This table was prepared November 1998.)

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Table A6.2.—Mean absolute percentage errors by lead time for current-fund expenditures and educational and general expenditures in constant dollars in public and private institutions of higher education by type

Lead Time (years)	Mean absolute percentage errors								
	Total	Public					Private		
		Total	4-year		2-year		Total	4-year	
			Total	Per student in FTE	Total	Per student in FTE		Total	Per student in FTE
	Current-fund expenditures								
	Last five editions [1]								
One	0.4%	0.5%	0.7%	0.8%	1.4%	1.3%	0.5%	0.6%	0.5%
Two	0.5%	0.6%	0.6%	1.8%	4.3%	2.3%	1.2%	1.2%	3.4%
Three	0.9%	0.7%	1.7%	2.5%	4.9%	4.1%	1.3%	1.3%	2.9%
Four	1.8%	1.8%	3.0%	2.1%	3.6%	3.2%	1.7%	1.7%	1.1%
Five	2.2%	2.3%	3.4%	0.6%	3.2%	3.0%	2.1%	2.0%	3.3%
Six	3.9%	4.8%	5.9%	1.8%	0.4%	2.3%	2.5%	2.4%	4.2%
	Six editions [2]								
One	0.9%	0.8%	1.1%	1.2%	1.5%	1.4%	1.2%	1.2%	1.2%
Two	1.0%	0.6%	0.9%	1.8%	4.5%	2.8%	2.3%	2.3%	4.1%
Three	1.2%	0.6%	1.6%	2.3%	4.8%	4.5%	2.4%	2.4%	3.2%
Four	2.7%	2.2%	3.4%	1.9%	2.9%	4.1%	3.6%	3.6%	2.6%
Five	3.6%	3.0%	4.0%	0.6%	2.2%	4.4%	4.8%	4.8%	4.8%
Six	5.4%	4.6%	5.6%	1.3%	0.6%	9.6%	6.7%	6.7%	5.0%
Seven	6.8%	4.9%	6.1%	1.0%	0.5%	21.4%	10.0%	9.9%	1.7%
Eight	7.1%	5.3%	6.7%	1.0%	0.7%	19.7%	10.0%	9.7%	0.7%
Nine	7.6%	6.3%	8.1%	0.0%	2.0%	21.2%	9.9%	9.7%	2.9%
Ten	6.3%	4.7%	6.5%	2.1%	3.6%	21.4%	9.0%	9.0%	5.4%
	Educational and general expenditures								
	Last five editions [1]								
One	0.3%	0.4%	0.8%	1.0%	1.6%	1.5%	0.8%	0.8%	0.8%
Two	0.7%	0.5%	0.9%	1.9%	4.9%	2.7%	1.6%	1.8%	2.0%
Three	0.6%	0.3%	1.8%	2.4%	5.7%	4.6%	2.2%	2.2%	2.2%
Four	0.5%	1.5%	3.0%	2.5%	4.3%	3.9%	2.9%	3.0%	3.8%
Five	0.5%	2.7%	4.4%	1.5%	3.6%	3.0%	4.3%	4.6%	3.3%
Six	1.1%	5.3%	6.8%	2.7%	0.7%	2.1%	6.1%	6.4%	4.8%
	Six editions [2]								
One	0.8%	0.7%	1.2%	1.3%	1.7%	1.6%	1.6%	1.6%	1.6%
Two	1.1%	0.5%	1.1%	1.9%	5.0%	3.1%	2.9%	2.9%	3.1%
Three	1.0%	0.2%	1.6%	2.2%	5.4%	5.0%	3.3%	3.3%	2.8%
Four	1.9%	2.0%	3.4%	2.3%	3.5%	4.7%	4.9%	5.0%	5.0%
Five	2.5%	3.0%	4.4%	1.1%	2.5%	4.5%	6.9%	7.1%	5.4%
Six	3.7%	4.0%	5.1%	2.7%	0.5%	9.7%	9.4%	9.6%	6.2%
Seven	6.1%	2.9%	3.9%	3.4%	0.7%	21.6%	11.8%	11.6%	3.6%
Eight	6.4%	3.1%	4.1%	3.7%	0.7%	19.7%	12.4%	12.1%	2.0%
Nine	7.1%	3.9%	5.4%	2.9%	2.0%	21.2%	12.8%	12.7%	0.5%
Ten	6.4%	2.7%	4.4%	4.4%	3.5%	21.3%	12.7%	12.8%	1.0%

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[1] *Projections of Education Statistics to 2003*, *Projections of Education Statistics to 2004*, *Projections of Education Statistics to 2005*, *Projections of Education Statistics to 2006*, and *Projections of Education Statistics to 2007*.

[2] *Projections of Education Statistics to 2000*, *Projections of Education Statistics to 2003*, *Projections of Education Statistics to 2004*, *Projections of Education Statistics to 2005*, *Projections of Education Statistics to 2006*, and *Projections of Education Statistics to 2007*. The projections presented in the *Projections of Education Statistics to 2000* were calculated using significantly different models than those presented in later editions including this one.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics*, various issues. (This table was prepared November 1998.)

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Appendix B

Supplementary Tables

Table B1.—Annual number of births (U.S. Census projections, Middle Series): 1949 to 2009

(In thousands)

Calendar Year	Number of Births
1949	3,667
1950	3,645
1951	3,845
1952	3,933
1953	3,989
1954	4,102
1955	4,128
1956	4,244
1957	4,332
1958	4,279
1959	4,313
1960	4,307
1961	4,317
1962	4,213
1963	4,142
1964	4,070
1965	3,801
1966	3,642
1967	3,555
1968	3,535
1969	3,626
1970	3,739
1971	3,556
1972	3,258
1973	3,137
1974	3,160
1975	3,144
1976	3,168
1977	3,327
1978	3,333
1979	3,494
1980	3,612
1981	3,629
1982	3,681
1983	3,639
1984	3,669
1985	3,761
1986	3,757
1987	3,809
1988	3,910
1989	4,041
1990	4,148
1991	4,111
1992	4,065
1993	4,000
1994	3,953
1995	3,900
1996	3,915
1997	3,899
	Projected
1998	3,899
1999	3,896
2000	3,898
2001	3,907
2002	3,920
2003	3,940
2004	3,967
2005	4,001
2006	4,042
2007	4,089
2008	4,140
2009	4,192

NOTE: Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1995 to 2050," *Current Population Reports*, Series P-25, No. 1130, February 1996; U.S. Department of Health and Human Services, National Center for Health Statistics (NCHS), Annual Summary of Births, Marriages, Divorces, and Deaths: United States, various years, *Monthly Vital Statistics Reports*; and unpublished tabulations. (This table was prepared August 1998.)

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Table B2.—Preprimary school-age populations (U.S. Census projections, Middle Series): 1984 to 2009

(In thousands)

Year (July 1)	3 years old	4 years old	5 years old	3-5 years old
1984	3,527	3,518	3,397	10,442
1985	3,566	3,568	3,518	10,652
1986	3,579	3,610	3,568	10,757
1987	3,508	3,623	3,610	10,741
1988	3,619	3,556	3,627	10,802
1989	3,646	3,669	3,559	10,874
1990	3,658	3,697	3,678	11,033
1991	3,714	3,711	3,694	11,119
1992	3,807	3,770	3,711	11,288
1993	3,963	3,868	3,773	11,604
1994	3,986	4,022	3,868	11,876
1995	3,960	4,045	4,023	12,028
1996	3,886	4,020	4,045	11,951
1997	3,839	3,947	4,022	11,808
Projected				
1998	3,830	3,911	3,962	11,703
1999	3,807	3,891	3,917	11,615
2000	3,791	3,869	3,896	11,556
2001	3,781	3,853	3,874	11,508
2002	3,775	3,843	3,858	11,476
2003	3,777	3,838	3,848	11,463
2004	3,781	3,838	3,844	11,463
2005	3,792	3,844	3,845	11,481
2006	3,807	3,854	3,850	11,511
2007	3,830	3,871	3,861	11,562
2008	3,861	3,894	3,878	11,633
2009	3,898	3,925	3,901	11,724

NOTE: Historical numbers may differ from those in previous editions. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," *Current Population Reports*, Series P-25, No. 1095, February 1993; U.S. Population Estimates by Age, Sex, Race, and Hispanic Origin: 1990 to 1997, Appendix B, PPL-91; and "Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1995 to 2050," *Current Population Reports*, Series P-25, No. 1130, February 1996; and unpublished tabulations. (This table was prepared August 1998.)

Table B3.—School-age populations (U.S. Census projections, Middle Series), ages 5, 6, 5–13, and 14–17 years: 1984 to 2009

(In thousands)

Year (July 1)	5 years old	6 years old	5–13 years old	14–17 years old
1984	3,397	3,298	30,063	14,726
1985	3,518	3,399	29,893	14,888
1986	3,568	3,518	30,078	14,825
1987	3,610	3,568	30,501	14,503
1988	3,627	3,611	31,030	14,023
1989	3,559	3,625	31,412	13,535
1990	3,678	3,560	31,993	13,319
1991	3,694	3,673	32,443	13,440
1992	3,711	3,692	32,906	13,677
1993	3,773	3,711	33,338	13,951
1994	3,868	3,771	33,669	14,443
1995	4,023	3,864	34,144	14,769
1996	4,045	4,018	34,550	15,149
1997	4,022	4,043	34,949	15,429
		Projected		
1998	3,962	4,032	35,608	15,503
1999	3,917	3,963	35,846	15,662
2000	3,896	3,917	36,044	15,752
2001	3,874	3,898	36,198	15,853
2002	3,858	3,876	36,276	16,091
2003	3,848	3,860	36,249	16,300
2004	3,844	3,850	36,055	16,638
2005	3,845	3,846	35,852	16,985
2006	3,850	3,846	35,668	17,238
2007	3,861	3,851	35,572	17,332
2008	3,878	3,863	35,539	17,215
2009	3,901	3,879	35,545	17,051

NOTE: Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," *Current Population Reports*, Series P-25, No. 1095, February 1993; U.S. Population Estimates by Age, Sex, Race, and Hispanic Origin: 1990 to 1997, Appendix B, PPL-91; and "Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1995 to 2050," *Current Population Reports*, Series P-25, No. 1130, February 1996; and unpublished tabulations. (This table was prepared August 1998.)

Table B4.—College-age populations (U.S. Census projections, Middle Series), ages 18, 18–24, 25–29, 30–34, and 35–44 years: 1984 to 2009

(In thousands)

Year (July 1)	18 years old	18–24 years old	25–29 years old	30–34 years old	35–44 years old
1984	3,774	29,707	21,584	19,576	30,576
1985	3,686	29,152	21,804	20,102	31,766
1986	3,623	28,468	22,018	20,552	33,081
1987	3,704	27,931	21,982	21,058	34,299
1988	3,803	27,584	21,869	21,470	35,258
1989	3,888	27,378	21,690	21,759	36,494
1990	3,606	27,046	21,358	21,994	37,855
1991	3,398	26,591	20,836	22,239	39,369
1992	3,332	26,165	20,241	22,308	39,968
1993	3,421	25,924	19,670	22,292	40,870
1994	3,380	25,575	19,211	22,199	41,745
1995	3,536	25,270	19,016	21,892	42,605
1996	3,570	24,982	19,055	21,379	43,413
1997	3,681	25,073	18,929	20,789	44,051
Projected					
1998	3,847	25,279	18,637	20,247	44,448
1999	3,849	25,828	18,222	19,780	44,719
2000	3,940	26,376	17,791	19,570	44,718
2001	3,949	26,975	17,296	19,590	44,459
2002	3,883	27,345	17,214	19,436	43,928
2003	4,007	27,798	17,359	19,157	43,305
2004	4,031	28,170	17,698	18,744	42,745
2005	4,052	28,384	18,126	18,307	42,223
2006	4,116	28,656	18,604	17,804	41,723
2007	4,213	28,937	19,015	17,722	40,964
2008	4,372	29,368	19,400	17,872	40,095
2009	4,395	29,890	19,624	18,209	39,218

NOTE: Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," *Current Population Reports*, Series P-25, No. 1095, February 1993; U.S. Population Estimates by Age, Sex, Race, and Hispanic Origin: 1990 to 1997, Appendix B, PPL-91; and "Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1995 to 2050," *Current Population Reports*, Series P-25, No. 1130, February 1996; and unpublished tabulations. (This table was prepared August 1998.)

Table B5.—Average daily attendance (ADA) in public elementary and secondary schools, change in ADA, the population, and ADA as a proportion of the population: 1983–84 to 2008–09

Year ending	ADA[1] (in thousands)	Change in ADA	Population (in millions)	ADA as a ratio of the the population
1984	36,363	-272,890	234.3	0.155
1985	36,404	41,283	236.3	0.154
1986	36,523	118,842	238.5	0.153
1987	36,864	340,764	240.7	0.153
1988	37,051	186,840	242.8	0.153
1989	37,268	217,365	245.0	0.152
1990	37,799	531,224	247.3	0.153
1991	38,427	627,247	249.9	0.154
1992	38,961	534,240	252.6	0.154
1993	39,570	609,679	255.4	0.155
1994	40,146	575,931	258.1	0.156
1995	40,721	574,370	260.6	0.156
1996	41,502	780,833	263.0	0.158
1997[2]	42,256	754,565	265.5	0.159
		Projected		
1998	42,933	677,068	267.9	0.160
1999	43,417	483,419	270.3	0.161
2000	43,787	370,803	272.6	0.161
2001	44,055	267,598	274.9	0.160
2002	44,289	233,639	277.2	0.160
2003	44,497	208,484	279.5	0.159
2004	44,631	133,917	281.8	0.158
2005	44,753	122,202	284.0	0.158
2006	44,851	97,635	286.3	0.157
2007	44,875	24,547	288.6	0.156
2008	44,824	-51,770	290.9	0.154
2009	44,724	-99,540	293.2	0.153

[1] Projections of average daily attendance were made by multiplying the forecasts for enrollment reported in chapter 1 by the average value of the ratio of average daily attendance to the enrollment from 1986 to 1995, approximately 0.93 percent.

[2] Average daily attendance is projected.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," Series P–25, No. 1095, February 1994 and unpublished tabulations; U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; Common Core of Data survey; Early Estimates survey; and Elementary and Secondary Average Daily Attendance Model. (This table was prepared August 1998.)

Table B6.—Disposable income per capita (in constant 1996–97 dollars),[1] with alternative projections: 1983–84 to 2008–09

Year ending	Disposable income per capita		
1984	$17,591	—	—
1985	18,404	—	—
1986	18,685	—	—
1987	18,911	—	—
1988	19,395	—	—
1989	19,801	—	—
1990	19,977	—	—
1991	19,872	—	—
1992	19,904	—	—
1993	20,105	—	—
1994	20,255	—	—
1995	20,642	—	—
1996	20,945	—	—
1997	21,365	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1998	21,776	$21,776	$21,776
1999	22,524	22,384	22,664
2000	22,713	22,383	23,044
2001	22,903	22,432	23,362
2002	23,153	22,520	23,771
2003	23,419	22,673	24,244
2004	23,792	22,894	24,797
2005	24,143	23,126	25,283
2006	24,444	23,324	25,673
2007	24,747	23,535	26,037
2008	25,069	23,767	26,410
2009	25,398	24,006	26,799

[1] Based on the price deflator for personal consumption expenditures, Bureau of Labor Statistics, U.S. Department of Labor.

— Not applicable.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: Standard & Poor's DRI, "U.S. Quarterly Model." (This table was prepared August 1998.)

Table B7.—Education revenue receipts from state sources per capita (in constant 1996–97 dollars),[1] with alternative projections: 1983–84 to 2008–09

Year ending	Education revenue receipts from state sources per capita		
1984	$402	—	—
1985	427	—	—
1986	451	—	—
1987	468	—	—
1988	475	—	—
1989	491	—	—
1990	497	—	—
1991	500	—	—
1992	495	—	—
1993	495	—	—
1994	495	—	—
1995	518	—	—
1996	534	—	—
1997[2]	547	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1998	554	$554	$554
1999	561	559	563
2000	568	565	572
2001	569	563	577
2002	578	566	595
2003	579	563	603
2004	582	562	605
2005	582	561	603
2006	584	562	606
2007	586	562	613
2008	588	560	619
2009	590	558	625

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Not applicable.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; Common Core of Data survey; Early Estimates survey; Revenue Receipts from State Sources Model; and National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1996–97. Copyright 1997 by the National Education Association. All rights reserved.) (This table was prepared November 1998.)

Table B8.—Consumer Price Index (base year 1996–97), with alternative projections: 1983–84 to 2008–09

Year ending	Consumer Price Index		
1984	0.640	—	—
1985	0.665	—	—
1986	0.685	—	—
1987	0.700	—	—
1988	0.729	—	—
1989	0.762	—	—
1990	0.799	—	—
1991	0.843	—	—
1992	0.870	—	—
1993	0.897	—	—
1994	0.920	—	—
1995	0.947	—	—
1996	0.972	—	—
1997	1.000	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1998	1.018	1.018	1.018
1999	1.039	1.051	1.031
2000	1.068	1.097	1.047
2001	1.098	1.149	1.064
2002	1.129	1.203	1.081
2003	1.162	1.260	1.100
2004	1.197	1.320	1.122
2005	1.235	1.384	1.146
2006	1.275	1.451	1.172
2007	1.318	1.523	1.200
2008	1.364	1.599	1.229
2009	1.411	1.680	1.259

—Not applicable.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: Standard & Poor's DRI, "U.S. Quarterly Model." (This table was prepared August 1998.)

Table B9.—Rate of change for the inflation rate based on the Consumer Price Index, with alternative projections: 1983–84 to 2008–09

Year ending	Rate of change for the inflation rate		
1984	–0.134	—	—
1985	0.059	—	—
1986	–0.259	—	—
1987	–0.231	—	—
1988	0.859	—	—
1989	0.100	—	—
1990	0.046	—	—
1991	0.148	—	—
1992	–0.419	—	—
1993	–0.023	—	—
1994	–0.160	—	—
1995	0.092	—	—
1996	–0.043	—	—
1997	0.036	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1998	–0.368	–0.368	–0.368
1999	0.160	0.809	–0.291
2000	0.319	0.366	0.222
2001	0.050	0.065	0.061
2002	–0.025	–0.011	–0.034
2003	0.041	0.018	0.114
2004	0.038	0.008	0.113
2005	0.033	0.003	0.083
2006	0.048	0.018	0.079
2007	0.028	0.017	0.041
2008	0.018	0.009	0.008
2009	0.016	0.006	–0.005

—Not applicable.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: Standard & Poor's DRI, ''U.S. Quarterly Model.'' (This table was prepared August 1998.)

Table B10.—Personal tax and nontax payments to state and local governments, per capita (in constant 1996–97 dollars),[1] with alternative projections: 1983–84 to 2008–09

Year ending	Personal tax and nontax payments per capita		
1984	$550	—	—
1985	576	—	—
1986	595	—	—
1987	642	—	—
1988	641	—	—
1989	666	—	—
1990	685	—	—
1991	681	—	—
1992	700	—	—
1993	713	—	—
1994	724	—	—
1995	741	—	—
1996	766	—	—
1997	797	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1998	835	$835	$835
1999	816	810	822
2000	811	799	827
2001	830	805	864
2002	835	802	887
2003	843	802	894
2004	847	804	893
2005	854	809	903
2006	864	812	920
2007	873	813	938
2008	882	814	957
2009	890	815	977

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

— Not applicable.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: Standard & Poor's DRI, "U.S. Quarterly Model." (This table was prepared August 1998.)

Table B11.—Indirect business taxes and nontax accruals, excluding property taxes, for state and local governments, per capita (in constant 1996–97 dollars),[1] with alternative projections: 1983–84 to 2008–09

Year ending	Indirect business taxes and nontax accruals per capita		
1984	$960	—	—
1985	1,007	—	—
1986	1,053	—	—
1987	1,069	—	—
1988	1,084	—	—
1989	1,087	—	—
1990	1,090	—	—
1991	1,073	—	—
1992	1,088	—	—
1993	1,105	—	—
1994	1,138	—	—
1995	1,157	—	—
1996	1,176	—	—
1997	1,191	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1998	1,216	$1,216	$1,216
1999	1,216	1,208	1,223
2000	1,224	1,206	1,244
2001	1,245	1,217	1,278
2002	1,259	1,220	1,306
2003	1,279	1,230	1,336
2004	1,297	1,242	1,361
2005	1,313	1,253	1,378
2006	1,324	1,261	1,386
2007	1,334	1,270	1,392
2008	1,347	1,280	1,400
2009	1,360	1,292	1,410

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

— Not applicable.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: Standard & Poor's DRI, "U.S. Quarterly Model." (This table was prepared August 1998.)

Table B12.—Sum of personal tax and nontax payments and indirect business taxes and tax accruals, excluding property taxes, for state and local governments per capita (in constant 1996–97 dollars),[1] with alternative projections: 1983–84 to 2008–09

Year ending	Tax and nontax payments per capita		
1984	$1,510	—	—
1985	1,583	—	—
1986	1,648	—	—
1987	1,711	—	—
1988	1,725	—	—
1989	1,753	—	—
1990	1,775	—	—
1991	1,754	—	—
1992	1,788	—	—
1993	1,817	—	—
1994	1,862	—	—
1995	1,898	—	—
1996	1,942	—	—
1997	1,988	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1998	2,051	$2,051	$2,051
1999	2,031	2,019	2,045
2000	2,035	2,006	2,071
2001	2,074	2,022	2,142
2002	2,094	2,022	2,193
2003	2,122	2,033	2,231
2004	2,143	2,045	2,254
2005	2,167	2,062	2,281
2006	2,187	2,073	2,306
2007	2,207	2,083	2,329
2008	2,228	2,094	2,357
2009	2,250	2,106	2,387

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

— Not applicable.

NOTE: Calculations were made using unrounded numbers. Historical numbers may differ from those in previous editions.

SOURCE: Standard & Poor's DRI, "U.S. Quarterly Model." (This table was prepared August 1998.)

Table B13.—Enrollment in public elementary and secondary schools, by grade, with projections: Fall 1990 to fall 2009

(In thousands)

Year	Total	Kindergarten[1]	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	Elementary Unclassified	Secondary Unclassifed
1990	41,217	3,610	3,499	3,327	3,297	3,248	3,197	3,110	3,067	2,979	3,169	2,896	2,612	2,381	543	282
1991	42,047	3,686	3,556	3,360	3,334	3,315	3,268	3,239	3,181	3,020	3,313	2,915	2,645	2,392	545	275
1992	42,823	3,817	3,542	3,431	3,361	3,342	3,325	3,303	3,299	3,129	3,352	3,027	2,656	2,431	539	269
1993	43,465	3,922	3,529	3,429	3,437	3,361	3,350	3,356	3,355	3,249	3,487	3,050	2,751	2,424	515	248
1994	44,111	4,047	3,593	3,440	3,439	3,426	3,372	3,381	3,404	3,302	3,604	3,131	2,748	2,488	494	242
1995	44,840	4,173	3,671	3,507	3,445	3,431	3,438	3,395	3,422	3,356	3,704	3,237	2,826	2,487	502	245
1996	45,592	4,208	3,769	3,596	3,518	3,447	3,447	3,486	3,457	3,398	3,793	3,316	2,925	2,582	434	218
1997[*]	46,323	4,162	3,831	3,672	3,604	3,516	3,460	3,485	3,545	3,416	3,808	3,416	2,999	2,662	495	252
Projected																
1998	46,844	4,100	3,820	3,732	3,680	3,602	3,530	3,498	3,543	3,502	3,828	3,430	3,090	2,729	505	253
1999	47,244	4,053	3,755	3,722	3,741	3,678	3,617	3,569	3,557	3,501	3,925	3,448	3,102	2,812	508	256
2000	47,533	4,031	3,712	3,659	3,731	3,739	3,693	3,656	3,629	3,514	3,924	3,535	3,118	2,823	511	257
2001	47,785	4,009	3,694	3,616	3,667	3,729	3,754	3,734	3,718	3,585	3,939	3,534	3,197	2,838	513	259
2002	48,010	3,992	3,673	3,599	3,624	3,665	3,744	3,795	3,796	3,673	4,018	3,548	3,196	2,910	514	263
2003	48,154	3,982	3,657	3,578	3,607	3,623	3,680	3,785	3,859	3,751	4,117	3,619	3,209	2,909	514	266
2004	48,286	3,978	3,648	3,563	3,586	3,605	3,637	3,720	3,848	3,813	4,204	3,708	3,273	2,920	511	271
2005	48,392	3,979	3,644	3,554	3,571	3,585	3,619	3,677	3,782	3,802	4,273	3,786	3,354	2,979	508	277
2006	48,418	3,984	3,644	3,551	3,562	3,570	3,599	3,659	3,738	3,737	4,262	3,849	3,424	3,052	506	281
2007	48,362	3,995	3,649	3,551	3,558	3,561	3,584	3,639	3,720	3,694	4,189	3,838	3,481	3,116	504	283
2008	48,255	4,013	3,660	3,555	3,558	3,557	3,575	3,624	3,699	3,676	4,140	3,773	3,471	3,168	504	282
2009	48,126	4,037	3,675	3,566	3,563	3,557	3,571	3,614	3,684	3,655	4,120	3,729	3,412	3,159	504	279

[1] Includes most kindergarten and some nursery school enrollment.

[*] Projected.

NOTE: Projections are based on data through 1996. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; and National Elementary and Secondary Enrollment Model. (This table was prepared August 1998.)

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Appendix C

Data Sources

Sources and Comparability of Data

The information in this report was obtained from many sources, including Federal and state agencies, private research organizations, and professional associations. The data were collected by many methods, including surveys of a universe (such as all colleges) or of a sample, and compilations of administrative records. Care should be used when comparing data from different sources. Differences in procedures, such as timing, phrasing of questions, and interviewer training mean that the results from the different sources are not strictly comparable. More extensive documentation of one survey's procedures than of another's does not imply more problems with the data, only that more information is available.

Accuracy of Data

The accuracy of any statistic is determined by the joint effects of "sampling" and "nonsampling" errors. Estimates based on a sample will differ from the figures that would have been obtained if a complete census had been taken using the same survey instruments, instructions, and procedures. Besides sampling errors, both surveys, universe and sample, are subject to errors of design, reporting, processing, and errors due to nonresponse. To the extent possible, these nonsampling errors are kept to a minimum by methods built into the survey procedures. In general, however, the effects of nonsampling errors are more difficult to gauge than those produced by sampling variability.

Sampling Errors

The standard error is the primary measure of sampling variability. It provides a specific range—with a stated confidence—within which a given estimate would lie if a complete census had been conducted. The chances that a complete census would differ from the sample by less than the standard error are about 68 out of 100. The chances that the difference would be less than 1.65 times the standard error are about 90 out of 100. The chances that the difference would be less than 1.96 times the standard error are about 95 out of 100. The chances that it would be less than 2.58 times as large are about 99 out of 100.

The standard error can help assess how valid a comparison between two estimates might be. The standard error of a difference between two sample estimates that are uncorrelated is approximately equal to the square root of the sum of the squared standard errors of the estimates. The standard error (se) of the difference between sample estimate "a" and sample estimate "b" is:

$$se_{a-b} = (se_a^2 + se_b^2)^{1/2}$$

Note that most of the standard errors in subsequent sections and in the original documents are approximations. That is, to derive estimates of standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, most of the standard errors presented provide a general order of magnitude rather than the exact standard error for any specific item.

Nonsampling Errors

Both universe and sample surveys are subject to nonsampling errors. Nonsampling errors are of two kinds—random and nonrandom. Random nonsampling errors may arise when respondents or interviewers interpret questions differently, when respondents must estimate values, or when coders, keyers, and other processors handle answers differently. Nonrandom nonsampling errors result from total nonresponse (no usable data obtained for a sampled unit), partial or item nonresponse (only a portion of a response may be usable), inability or unwillingness on the part of respondents to provide information, difficulty interpreting questions, mistakes in recording or keying data, errors of collection or processing, and overcoverage or undercoverage of the target universe. Random nonresponse errors usually, but not always, result in an understatement of sampling errors and thus an overstatement of the precision of survey estimates. Because estimating the magnitude of nonsampling errors would require special experiments or access to independent data, these magnitudes are seldom available.

To compensate for suspected nonrandom errors, adjustments of the sample estimates are often made. For example, adjustments are frequently made for nonresponse, both total and partial. An adjustment made for either type of nonresponse is often referred to as an imputation, that is, substitution of the "average" questionnaire response for the nonresponse. Imputations are usually made separately within various groups of sample members that

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have similar survey characteristics. Imputation for item nonresponse is usually made by substituting for a missing item the response to that item of a respondent having characteristics that are similar to those of the nonrespondent.

Although the magnitude of nonsampling errors in the data used in this *Projections of Education Statistics* is frequently unknown, idiosyncrasies that have been identified are noted on the appropriate tables.

Federal Agency Sources

National Center for Education Statistics (NCES)

Common Core of Data

NCES uses the Common Core of Data (CCD) survey to acquire and maintain statistical data on the 50 states, the District of Columbia, and the outlying areas from the universe of state-level education agencies. Information about staff and students is collected annually at the school, LEA (local education agency or school district), and state levels. Information about revenues and expenditures is also collected at the state and school district level.

Data are collected for a particular school year (July 1 through June 30) via survey instruments sent to the states by October 15 of the subsequent school year. States have 2 years in which to modify the data originally submitted.

Since the CCD is a universe survey, the CCD information presented in this edition of *Projections of Education Statistics* is not subject to sampling errors. However, nonsampling errors could come from two sources—nonreturn and inaccurate reporting. Almost all of the states submit the CCD survey instruments each year, but submissions are sometimes incomplete or too late for publication.

Understandably, when 57 education agencies compile and submit data for over 85,000 public schools and approximately 15,000 local school districts, misreporting can occur. Typically, this results from varying interpretation of NCES definitions and differing recordkeeping systems. NCES attempts to minimize these errors by working closely with the Council of Chief State School Officers (CCSSO).

The state education agencies report data to NCES from data collected and edited in their regular reporting cycles. NCES encourages the agencies to incorporate into their own survey systems the NCES items they do not already collect so that those items will also be available for the subsequent CCD survey. Over time, this has meant fewer missing data cells in each state's response, reducing the need to impute data.

NCES subjects data from the education agencies to a comprehensive edit. Where data are determined to be inconsistent, missing, or out of range, NCES contacts the education agencies for verification. NCES-prepared state summary forms are returned to the state education agencies for verification. States are also given an opportunity to revise their state-level aggregates from the previous survey cycle.

Questions concerning the Common Core of Data can be directed to:

John Sietsema
Elementary/Secondary and Libraries Studies Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Private School Universe Survey, 1995–96 The Private School Survey (PSS) is designed to collect data from all private schools in the 50 states and the District of Columbia. This survey was conducted in 1995-96 by the U.S. Bureau of the Census for the National Center for Education Statistics (NCES). The counts presented are estimates derived from an area frame as well as a census of lists; an estimate of the total undercount is also given.

Since 1983, NCES has used a dual frame approach for building its private school universe. The dual frame consists a list frame and an area frame. The list building component was the primary means for improving coverage of private schools. To identify schools that may have been overlooked in the list building component, an area frame component was also included. The combination of the universe list and additional schools identified in the area search comprised schools in the 1995–96 Private School Universe Survey. The basis of the 1995–96 list frame was the 1993–94 PSS.

Beginning in 1995, NCES also collected data from schools for which kindergarten is the highest grade. Those 1995–96 PSS schools meeting the pre-1995 definition of a private school (including any of grades 1 through 12) are referred to as traditional schools. Schools with kindergarten, but no grade higher than kindergarten, are referred to as kindergarten terminal (k-terminal) schools. NCES requested and collected membership lists from 26 private school associations and religious denominations. The associations were asked to include schools that met the new PSS school definition when they provided lists. The 50 states and the District of Columbia were asked to provide lists of private schools meeting the traditional definition of a school, as well as separate lists of programs which might include a kindergarten. These requests were made with the traditional state sources (the education departments) and also with other departments, such as health or recreation. As a result of these efforts, approximately 5,525 schools were added in 1995, for a total of 31,698 traditional schools on the private school universe list.

Using primary sampling units (PSUs), the 1995–96 PSS area frame was designed to produce 50 percent overlap with the previous PSS. By maintaining a 50 percent overlap of PSUs, the reliability of estimates of change was maintained at a reasonable level. The United States was divided into 2,054 PSUs, each consisting of a single county, independent city, or cluster of geographically contiguous areas. A minimum of two PSUs were allocated to each of the 16 strata (32 PSUs). An additional 26 PSUs were allocated to the 16 strata to more nearly approximate a uniform sampling fraction of PSUs from each stratum.

The strata were defined the same way as in the 1993–94 PSS area frame design: (a) four Census regions (Northeast, Midwest, South, West), (b) metro/nonmetro status (two levels) and (c) whether the PSU's percent private school enrollment exceeded the median percent private enrollment of the other PSUs in the census region/metro status strata (two levels - using 1990 Census data).

A total of 124 distinct PSUs were in the area sample. Within each of the 124 PSUs, the Census Bureau attempted to find all eligible private schools. A block-by-block listing of all private schools in a sample of PSUs was not attempted. Rather, regional office field staff created the frame by using such sources as yellow pages, non-Roman Catholic religious institutions, local education agencies, chambers of commerce, and local government offices. (Roman Catholic religious institutions were not contacted because their lists are usually current.) Once the area search lists were constructed, they were matched with the NCES private school universe list. Schools that did not match the universe list were considered part of the area frame.

The data collection phase consisted of two stages: A mailout/mailback stage and a telephone follow-up stage. The Census Bureau mailed PSS questionnaires to a total of 40,866 private schools on October 13, 1995. One week after the initial mailout, a postcard was sent reminding the school staff to complete and return the questionnaire. On November 22, 1995, a second questionnaire was sent to the schools not responding to the first. A reminder postcard was sent one week after the second mailout. The return rate for first mailout was 46 percent while the return for the second mailout was 67 percent.

On February 29, 1996, the Census Bureau began telephone interviewing for schools not responding to the mail questionnaire. An additional 4,730 schools from the area frame operation were added to the workload at this time. Interviewing took place at the Census Bureau's two Computer Assisted Telephone Interviewing (CATI) facilities located in Hagerstown, MD and Tucson, AZ. CATI follow-up continued through May 22, 1996. Additional follow-up was conducted in the Census Bureau's 12 Regional Offices for the 1,474 schools that could not be contacted by telephone. The final return rate was 99 percent.

Questions concerning the Private School Universe Survey can be directed to:

Stephen P. Broughman
Elementary/Secondary and Libraries Studies Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208-5651

Private School Early Estimates System: 1992–93. Early in September 1992, advance questionnaires were mailed to a national probability sample of 1,167 private elementary and secondary schools. Telephone collection of the data began in early October and was completed in mid-October. The telephone data collection used Computer Assisted Telephone Interviewing (CATI) technology to collect the data and perform preliminary edits. The overall response rate was 93.3 percent: 1,045 of the 1,120 eligible schools. Some 47 of the original 1,167 schools in the sample were determined to be out-of-scope. After adjusting for out-of-scope schools, the weighted estimate of private schools is 26,011.

The sampling frame used for the Private School Early Estimates Survey was the 1991–92 NCES Private School Survey (PSS). This survey collected information on the number of teachers and students in private schools, by school religious orientation and level as well as actual and projected counts of high school graduates. The PSS, and therefore the early estimates survey, uses two nonoverlapping frames: the list frame of approximately 24,000 eligible schools (the universe list), and an area frame developed by the Census Bureau, consisting of 355 schools identified in 124 sampled geographic areas (Primary Sampling Units or PSUs). The area frame is constructed from a sample survey designed to capture those schools not included in the universe list and is repeated every 2 years. The 355 schools identified in the sampled areas are weighted to a national estimate of the number of private schools not included in the universe list. This weighted number is then added to the universe count to produce an estimate of the total number of private schools in the United States.

For the early estimates, the list frame was stratified by level of school (elementary, secondary, and combined) and religious orientation (Catholic, other religious, and nonsectarian). Within strata, schools were further sorted by Census region (Northeast, Midwest, South, and West), by urbanicity (urban, suburban, and rural) within region, and by student membership size within urbanicity. Each school in the sorted frame was assigned a sampling measure of size equal to the square root of student membership.

The area frame was stratified by level of school (elementary, secondary, and combined) and religious orientation (Catholic, other religious, and nonsectarian). Within strata, schools were further sorted by FIPS (Federal Information Processing Standards) state code, by PSU within state, and by student membership within PSU. Samples were selected with probabilities proportionate to size from each stratum. The measure of size used for this purpose was the square root of student membership multiplied by the inverse of the probability of selection of the PSU in which the school is located.

The estimation procedure is a two-step process. The first step is to produce estimates based on the NCES frame for private schools (1991–92 Private School Survey [PSS]). These estimates are adjusted for total school nonresponse, as well as item nonresponse. The second step is to update the PSS-based estimates, using the data collected in the 1992 Early Estimates Survey (EES). This EES update is a ratio estimate of the 1992 estimate from EES divided by the 1991 estimate based on the 1991 PSS data for the EES sample. The estimates in the tables are the PSS-based estimates times the EES update. The early estimates in this report incorporate the relevant estimates from the PSS and update them using data collected in the EES.

The private school early estimates are based on a sample; these estimates may differ somewhat from figures that would have been obtained if a complete census of private schools had been taken using the same questionnaire and procedures. The standard error indicates the magnitude of the sampling error, the variability due to sampling when estimating a statistic. It indicates how much variance there is in the population of possible estimates of a parameter for a given sample size. Standard errors can be used as a measure of the precision expected from a particular sample. If all possible samples were surveyed under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. This is a 95 percent confidence interval. For example, for the ratio of private school pupils to private school teachers in 1992–93, the estimate for all private schools is 14.9 and the standard error is 0.2. The 95 percent confidence interval for this statistic extends from 14.9 - (0.2 times 1.96) to 14.9 + (0.2 times 1.96) or from 14.5 to 15.3. The standard error for the 4,964,258 students in private schools is 116,612. The 95 percent confidence interval for this statistic extends from 4,735,698 to 5,192,818.

Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as balanced repeated replication (BRR)—a technique that splits the sample into several different half-samples. Weight-adjusted estimates are computed from the half-samples. Finally, the standard error of the half-sample estimates is used as an approximation for the full-sample standard error. The standard errors for private school early estimates for school years 1991–92 and 1992–93 are shown in the table below.

Students (1992–93)	**Teachers (1992–93)**	**Graduates (1991–92)**
116,612.2	8,714.8	6,071.4

Survey estimates are also subject to errors of reporting and errors made in the collection and processing of the data. These errors, called nonsampling errors, can sometimes bias the data. While general sampling theory can be used to estimate the sampling variability of an estimate, nonsampling errors are not easy to measure and usually require either an experiment conducted as part of the data collection procedure or use of data external to the study.

Nonsampling errors may include such things as differences in the respondents' interpretation of the meaning of the questions, differences related to the particular time the survey was conducted, or errors in data preparation. The content of the survey was developed in consultation with representatives of private school associations attending NCES meetings for users and providers of private school data. The questionnaire and instructions were reviewed extensively by NCES staff. The CATI instrument provided on-line internal consistency checks (i.e., totals equal sum of parts) as well as consistency checks with 1991 data for the sample schools. Interviewers resolved discrepancies with the school during the course of the interview. Machine editing of the questionnaires was conducted to check the data for accuracy and consistency. Data inputs into the CATI system were transferred directly to data bases, avoiding potential keying errors.

Undercoverage in the list and area frames is another possible source of nonsampling error. The area frame was used to complement the list frame through the identification of schools missing from the list frame. The area frame represents approximately 10 percent of the total number of private schools. The 1991–92 list and area frame updates to the PSS were reflected in this year's early estimates, and so schools newly opened since 1989 are included in those new estimates.

Questions concerning the Private School Early Estimates System can be directed to:

Frank H. Johnson
Elementary/Secondary and Libraries Studies Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Integrated Postsecondary Education Data System

The Integrated Postsecondary Education Data System (IPEDS) surveys all postsecondary institutions, including universities and colleges, as well as institutions offering technical and vocational education beyond the high school level. This survey, which began in 1986, replaces and supplements the Higher Education General Information Survey (HEGIS).

The IPEDS consists of several integrated components that obtain information on who provides postsecondary education (institutions), who participates in it and completes it (students), what programs are offered and what programs are completed, and both the human and financial resources involved in the provision of institutionally based postsecondary education. Specifically, these components include: institutional characteristics, including institutional activity; fall enrollment, including age and residence; fall enrollment in occupationally specific programs; completions; finance; staff; salaries of full-time instructional faculty; and academic libraries.

The higher education portion of this survey is a census of accredited 2- and 4-year colleges. Prior to 1993, data from the technical and vocational institutions were collected through a sample survey. Beginning in 1993, all data are gathered in a census of all postsecondary institutions. Thus, some portions of the earlier data will be subject to sampling and nonsampling errors, while some portions will be subject only to nonsampling errors.

Prior to the establishment of IPEDS in 1986, HEGIS acquired and maintained statistical data on the characteristics and operations of institutions of higher education. Implemented in 1966, HEGIS was an annual universe survey of institutions listed in the latest NCES *Education Directory, Colleges and Universities*.

The information presented in this report draws on IPEDS surveys that solicited information concerning institutional characteristics, enrollment, degrees, and finances. The higher education portion of this system is a census of accredited 2- and 4-year colleges. Since these surveys cover all institutions in the universe, the data are not subject to sampling error.

However, they are subject to nonsampling error, the sources of which vary with the survey instrument. Each survey will therefore be discussed separately. Information concerning the nonsampling error of the enrollment and degrees surveys is drawn extensively from the HEGIS Post-Survey Validation Study conducted in 1979.

Institutional Characteristics. This survey provides the basis for the universe of institutions presented in the *Directory of Postsecondary Institutions*. The universe comprised institutions that met certain accreditation criteria and offered at least a 1-year program of college-level studies leading toward a degree. All of these institutions were certified as eligible by the U.S. Department of Education's Division of Eligibility and Agency Evaluation. Each fall, institutions listed in the previous year's *Directory* were asked to update their information.

Fall Enrollment. This survey has been part of the IPEDS or HEGIS series since 1966. The enrollment survey response rate was relatively high; the 1995 response rate was 97.0 percent. Major sources of nonsampling error for this survey were classification problems, the unavailability of needed data, interpretation of definitions, the survey due date, and operational errors. Of these, the classification of students appears to have been the main source of error. Institutions had problems in correctly classifying first-time freshmen, other first-time students, and unclassified students for both full-time and part-time categories. These problems occurred most often at 2-year institutions (private and public) and private 4-year institutions. In the 1977–78 HEGIS validation studies, the classification problem led to an estimated overcount of 11,000 full-time students and an undercount of 19,000 part-time students. Although the ratio of error to the grand total was quite small (less than 1 percent), the percentage of errors was as high as 5 percent for detailed student levels and even higher at certain aggregation levels.

Beginning with fall 1986, the survey system was redesigned with the introduction of the Integrated Postsecondary Education Data System (IPEDS) (see above). The new survey system comprises all postsecondary institutions, but also maintains comparability with earlier surveys by allowing HEGIS institutions to be tabulated separately. The new system also provides for preliminary and revised data releases. This allows the Center flexibility to release early data sets while still maintaining a more accurate final data base.

Completions. This survey was part of the HEGIS series throughout its existence. However, the degree classification taxonomy was revised in 1970–71, 1982–83, and 1991–92. Collection of degree data has been maintained through the IPEDS system.

Though information from survey years 1970–71 through 1981–82 is directly comparable, care must be taken if information before or after that period is included in any field of study comparison. The nonresponse rate did not appear to be a significant source of nonsampling error for this survey. The return rate over the years was high, with the response rate for the 1994–95 survey at 97 percent. Because of the high return rate, nonsampling error caused by imputation was also minimal.

The major sources of nonsampling error for this survey were differences between the NCES program taxonomy and taxonomies used by the colleges, classification of double majors and double degrees, operational problems, and survey timing. In the 1979 HEGIS validation study, these sources of nonsampling were found to contribute to an error rate of 0.3 percent overreporting of bachelor's degrees and 1.3 percent overreporting of master's degrees. The differences, however, varied greatly among fields. Over 50 percent of the fields selected for the validation study had no errors identified. Categories of fields that had large differences were business and management, education, engineering, letters, and psychology. It was also shown that differences in proportion to the published figures were less than 1 percent for most of the selected fields that had some errors. Exceptions to these were: master's and doctor's programs in labor and industrial relations (20 percent and 8 percent); bachelor's and master's programs in art education (3 percent and 4 percent); bachelor's and doctor's programs in business and commerce, and in distributive education (5 percent and 9 percent); master's programs in philosophy (8 percent); and doctor's programs in psychology (11 percent).

Financial Statistics. This survey was part of the HEGIS series and has been continued under the IPEDS system. Changes were made in the financial survey instruments in fiscal years (FY) 1976, 1982, and 1987. The FY 76 survey instrument contained numerous revisions to earlier survey forms and made direct comparisons of line items very difficult. Beginning in FY 82, Pell Grant data were collected in Federal restricted grants and contracts revenues and restricted scholarships and fellowships expenditures. The introduction of the Integrated Postsecondary Education Data System (IPEDS) in the FY 87 survey included several important changes to the survey instrument and data processing procedures. While these changes were significant, considerable effort has been made to present only comparable information on trends in this report and to note inconsistencies. Finance tables for this publication have been adjusted by subtracting the largely duplicative Pell Grant amounts from the later data to maintain comparability with pre-FY 82 data.

Possible sources of nonsampling error in the financial statistics include nonresponse, imputation, and misclassification. The response rate has been about 85 to 90 percent for most of the years reported. The response rate for the FY 1995 survey was 94 percent.

Two general methods of imputation were used in HEGIS. If the prior years' data were available for a nonresponding institution, these data were inflated using the Higher Education Price Index and adjusted according to changes in enrollments. If there were no data for the previous four years, current data were used from peer institutions selected for location (state or region), control, level, and enrollment size of institution. In most cases, estimates for nonreporting institutions in IPEDS were made using data from peer institutions.

Beginning with FY 87, the new system (IPEDS) comprises all postsecondary institutions, but also maintains comparability with earlier surveys by allowing 2- and 4-year HEGIS institutions to be tabulated separately. The finance data tabulated for this publication reflect totals for the HEGIS or higher education institutions only.

To reduce reporting error, NCES used national standards for reporting finance statistics. These standards are contained in *College and University Business Administration: Administrative Services (1974 Edition)* and the *Financial Accounting and Reporting Manual for Higher Education (1990 Edition)* published by the National Association of College and University Business Officers; *Audits of Colleges and Universities* (as amended August 31, 1974), by the American Institute of Certified Public Accountants; and *HEGIS Financial Reporting Guide (1980)*, by NCES. Wherever possible, definitions and formats in the survey are consistent with those in these four accounting texts.

Questions concerning the surveys used as data sources for this report or other questions concerning HEGIS and IPEDS can be directed to:

Susan G. Broyles
Postsecondary Studies Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Bureau of the Census

Current Population Survey

Current estimates of school enrollment, as well as social and economic characteristics of students, are based on data collected in the Census Bureau's monthly survey of about 60,000 households. The monthly Current Population Survey (CPS) sample consists of 729 areas comprising 1,973 counties, independent cities, and minor civil divisions throughout the 50 states and the District of Columbia. The sample was initially selected from the 1980 census files and is periodically updated to reflect new housing construction.

The monthly CPS deals primarily with labor force data for the civilian noninstitutional population (i.e., excluding military personnel and their families living on posts and inmates of institutions). In addition, in October of each year, supplemental questions are asked about highest grade completed, level of current enrollment, attendance status, number and types of courses, degree or certificate objective, and type of organization offering instruction for each member of the household.

The estimation procedure used for the monthly CPS data involves inflating weighted sample results to independent estimates of characteristics of the civilian noninstitutional population in the United States by age, sex, and race. These independent estimates are based on statistics from decennial censuses that include statistics on births, deaths, immigration, and emigration and statistics on the population in the armed services. Generalized standard error tables are in the *Current Population Reports*. The data are subject to both nonsampling and sampling errors.

More information is available in the *Current Population Reports*, Series P-20, or by contacting:

Education and Social Stratification Branch
Bureau of the Census
U.S. Department of Commerce
Washington, DC 20233

School Enrollment. Each October, the Current Population Survey (CPS) includes supplemental questions on the enrollment status of the population 3 years old and over. The main sources of nonsampling variability in the responses to the supplement are those inherent in the survey instrument. The question concerning educational attainment may be sensitive for some respondents who may not want to acknowledge their lack of a high school diploma. The question of current enrollment may not be answered accurately for various reasons. Some respondents may not know current grade information for every student in the household, a problem especially prevalent for households with members in college or in nursery school. Confusion over college credits or hours taken by a student may make it difficult to determine the year in which the student is enrolled. Problems may occur with the definition of nursery school (a group or class organized to provide educational experiences for children) where respondents' interpretations of "educational experiences" vary.

Questions concerning the CPS "School Enrollment" survey may be directed to:

Education and Social Stratification Branch
Bureau of the Census
U.S. Department of Commerce
Washington, DC 20233

State population projections. These state population projections were prepared using a cohort-component method by which each component of population change—births, deaths, state-to-state migration flows, international in-migration, and international out-migration—was projected separately for each birth cohort by sex, race, and Hispanic origin. The basic framework was the same as in past Census Bureau projections. Detailed components necessary to create the projections were obtained from vital statistics, administrative records, census data, and national projections.

The cohort-component method is based on the traditional demographic accounting system:

$$P_1 = P_0 + B - D + DIM - DOM + IIM - IOM$$

where:

P_1 = population at the end of the period

P_0 = population at the beginning of the period

B = births during the period

D = deaths during the period

DIM = domestic in-migration during the period

DOM = domestic out-migration during the period

IIM = international in-migration during the period

IOM = international out-migration during the period

To generate population projections with this model, the Census Bureau created separate data sets for each of these components. In general, the assumptions concerning the future levels of fertility, mortality, and international migration are consistent with the assumptions developed for the national population projections of the Census Bureau.

Once the data for each component were developed, it was a relatively straightforward process to apply the cohort-component method and produce the projections. For each projection year the base population for each state was disaggregated into eight race and Hispanic categories (non-Hispanic white; non-Hispanic black; non-Hispanic American Indian, Eskimo, and Aleut; non-Hispanic Asian and Pacific Islander, Hispanic white; Hispanic black; Hispanic American Indian, Eskimo, and Aleut; and Hispanic Asian and Pacific Islander), by sex, and single year of age (ages 0 to 85+). The next step was to survive each age-sex-race-ethnic group forward 1 year using the pertinent survival rate. The internal redistribution of the population was accomplished by applying the appropriate state-to-state migration rates to the survived population in each state. The projected out-migrants were subtracted from the state of origin and added to the state of destination (as in-migrants). Next, the appropriate number of immigrants from abroad were added to each group. The populations under age 1 were created by applying the appropriate age-race-ethnic-specific birth rates to females of childbearing age. The number of births by sex and race/ethnicity were survived forward and exposed to the appropriate migration rate to yield the population under age 1. The final results of the projection process were adjusted to be consistent with the national population projections by single years of age, sex, race, and Hispanic origin. The entire process was then repeated for each year of the projection.

More information is available in the Census Bureau Population Paper Listing 47 (PPL-47) and Current Population Report P25-1130. These reports may be obtained from:

Statistical Information Staff
Bureau of the Census
U.S. Department of Commerce
Washington, DC 20233
(301) 457-2422
INTERNET: http://www.census.gov

Other Sources

National Education Association

Estimates of School Statistics

The National Education Association (NEA) reports teacher, revenue, and expenditure data in its annual publication, *Estimates of School Statistics*. Each year, NEA prepares regression-based estimates of financial and other education statistics and submits them to the states for verification. Generally, about 30 states adjust these estimates based on their own data. These preliminary data are published by NEA along with revised data from previous years. States are asked to revise previously submitted data as final figures become available. The most recent publication contains all changes reported to the NEA.

Additional information is available from:

National Education Association—Research
1201 16th Street NW
Washington, DC 20036

Standard and Poor's DRI

Standard and Poor's DRI provides an information system that includes more than 125 databases: simulation and planning models; regular publications and special studies; data retrieval and management systems; and access to experts on economic, financial, industrial, and market activities. One service is the DRI U.S. Annual Model Forecast Data Bank, which contains annual projections of the U.S. economic and financial conditions, including forecasts for the federal government, incomes, population, prices and wages, and state and local government, over a long-term (10 to 25-year) forecast period.

Additional information is available from:

Standard and Poor's DRI
24 Hartwell Avenue
Lexington, MA 02173

Appendix D

Glossary

Data Terms

Associate's degree: A degree granted for the successful completion of a subbaccalaureate program of studies, usually requiring at least 2 years (or the equivalent) of full-time college-level study. This term includes degrees granted in a cooperative or work–study program.

Average daily attendance (ADA): The aggregate attendance of a school during a reporting period (normally a school year) divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered days in session.

Average daily membership (ADM): The aggregate membership of a school during a reporting period (normally a school year) divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered as days in session. The average daily membership for groups of schools having varying lengths of terms is the average of the average daily memberships obtained for the individual schools.

Bachelor's degree: A degree granted for the successful completion of a baccalaureate program of studies, usually requiring at least 4 years (or the equivalent) of full-time college-level study. This term includes degrees granted in a cooperative or work–study program.

Classroom teacher: A staff member assigned the professional activities of instructing pupils in self-contained classes or courses, or in classroom situations. Usually expressed in full-time equivalents.

Cohort: A group of individuals that have a statistical factor in common, for example, year of birth.

College: A postsecondary school that offers a general or liberal arts education, usually leading to an associate, bachelor's, master's, doctor's, or first-professional degree. Junior colleges and community colleges are included in this term.

Constant dollars: Dollar amounts that have been adjusted by means of price and cost indexes to eliminate inflationary factors and allow direct comparison across years.

Consumer Price Index (CPI): This price index measures the average change in the cost of a fixed market basket of goods and services purchased by consumers.

Current dollars: Dollar amounts that have not been adjusted to compensate for inflation.

Current expenditures (elementary/secondary): The expenditures for operating local public schools, excluding capital outlay and interest on school debt. These expenditures include such items as salaries for school personnel, fixed charges, student transportation, school books and materials, and energy costs.

Current expenditures per pupil in average daily attendance: Current expenditures for the regular school term divided by the average daily attendance of full-time pupils (or full-time-equivalency of pupils) during the term. See also *current expenditures* and *average daily attendance*.

Current-fund expenditures (higher education): Money spent to meet current operating costs, including salaries, wages, utilities, student services, public services, research libraries, scholarships and fellowships, auxiliary enterprises, hospitals, and independent operations. Excludes loans, capital expenditures, and investments.

Current Population Survey: See Appendix C, Data Sources.

Disposable income: Current income received by persons less their contributions for social insurance, personal tax, and nontax payments. It is the income available to persons for spending and saving. Nontax payments include passport fees, fines and penalties, donations, and tuitions and fees paid to schools and hospitals operated mainly by the government. See also *personal income*.

Doctor's degree: An earned degree carrying the title of doctor. The Doctor of Philosophy degree (Ph.D.) is the highest academic degree and requires mastery within a field of knowledge and demonstrated ability to perform scholarly research. Other doctorates are awarded for fulfilling specialized requirements in professional fields, such as education (Ed.D.), musical arts (D.M.A.), business administration (D.B.A.), and engineering (D.Eng. or D.E.S.). Many doctor's degrees in both academic and professional fields require an earned master's degree as a prerequisite. First-professional degrees, such as M.D. and D.D.S., are not included under this heading.

Educational and general expenditures: The sum of current funds expenditures on instruction, research, public service, academic support, student services, institutional support, operation and maintenance of plant, and awards from restricted and unrestricted funds.

Elementary school: A school classified as elementary by state and local practice and composed of any span of grades not above grade 8. A preschool or kindergarten school is included under this heading only if it is an integral part of an elementary school or a regularly established school system.

Elementary and secondary schools: As used in this publication, includes only regular schools, that is, schools that are part of state and local school systems and also most private elementary and secondary schools, both religiously affiliated and nonsectarian. Schools not included in this term are subcollegiate departments of institutions of higher education, American residential schools for exceptional children, federal schools for Indians, and federal schools on military posts and other federal installations.

Enrollment: The number of students registered in a given school unit at a given time, generally in the fall of a year.

Expenditures: Charges incurred, whether paid or unpaid, that are presumed to benefit the current fiscal year. For elementary and secondary schools, these include all charges for current outlays plus capital outlays and interest on school debt. For institutions of higher education, these include current outlays plus capital outlays. For government, these include charges net of recoveries and other correcting transactions other than for retirement of debt, investment in securities, or extension of credit. Government expenditures include only external transactions, such as the provision of perquisites or other payments in kind. Aggregates for groups of governments exclude intergovernmental transactions.

Expenditures per pupil: Charges incurred for a particular period of time divided by a student unit of measure, such as average daily attendance or average daily membership.

First-professional degree: A degree that signifies both completion of the academic requirements for beginning practice in a given profession and a level of professional skill beyond that normally required for a bachelor's degree. This degree is based on a program requiring at least 2 academic years of work before entrance and a total of at least 6 academic years of work to complete the degree program, including both prior required college work and the professional program itself. By NCES definition, first-professional degrees are awarded in the fields of dentistry (D.D.S. or D.M.D.), medicine (M.D.), optometry (O.D.), osteopathic medicine (D.O.), pharmacy (D.Phar.), podiatry (D.P.M.), veterinary medicine (D.V.M.), chiropractic (D.C. or D.C.M.), law (LL.B. or J.D.), and theological professions (M.Div. or M.H.L.).

First-professional enrollment: The number of students enrolled in a professional school or program that requires at least 2 years of academic college work for entrance and a total of at least 6 years for a degree. By NCES definition, first-professional enrollment includes only students in certain programs. (See *first-professional degree* for a list of programs.)

Full-time enrollment: The number of students enrolled in higher education courses with total credit load equal to at least 75 percent of the normal full-time course load.

Full-time-equivalent (FTE) enrollment: For institutions of higher education, enrollment of full-time students, plus the full-time equivalent of part-time students as reported by institutions. In the absence of an equivalent reported by an institution, the FTE enrollment is estimated by adding one-third of part-time enrollment to full-time enrollment.

Full-time worker: In educational institutions, an employee whose position requires being on the job on school days throughout the school year at least the number of hours the schools are in session; for higher education, a member of an educational institution's staff who is employed full time.

Graduate: An individual who has received formal recognition for the successful completion of a prescribed program of studies.

Graduate enrollment: The number of students who hold the bachelor's or first-professional degree, or the equivalent, and who are working toward a master's or doctor's degree. First-professional students are counted separately. These enrollment data measure those students who are registered at a particular time during the fall. At some institutions, graduate enrollment also includes students who are in postbaccalaureate classes but not in degree programs.

High school: A secondary school offering the final years of high school work necessary for graduation, usually including grades 10, 11, and 12 (in a 6-3-3 plan), or grades 9, 10, 11, and 12 (in a 6-2-4 plan).

Higher education: Study beyond secondary school at an institution that offers programs terminating in an associate, baccalaureate, or higher degree.

Higher education institutions (traditional classifications):

4-year institution: An institution legally authorized to offer and offering at least a 4-year program of college-level studies wholly or principally creditable toward a bachelor's degree. A university is a postsecondary institution that typically includes one or more graduate professional schools.

2-year institution: An institution legally authorized to offer and offering at least a 2-year program of college-level studies that terminates in an associate degree or is principally creditable toward a baccalaureate.

Higher Education Price Index: A price index which measures average changes in the prices of goods and services purchased by colleges and universities through current-fund education and general expenditures (excluding expenditures for sponsored research and auxiliary enterprises).

Instructional staff: Full-time-equivalent number of positions, not the number of individuals occupying the positions during the school year. In local schools, it includes all public elementary and secondary (junior and senior high) day-school positions that are in the nature of teaching or the improvement of the teaching–learning situation. Includes consultants or supervisors of instruction, principals, teachers, guidance personnel, librarians, psychological personnel, and other instructional staff. Excludes administrative staff, attendance personnel, clerical personnel, and junior college staff.

Master's degree: A degree awarded for successful completion of a program generally requiring 1 or 2 years of full-time college-level study beyond the bachelor's degree. One type of master's degree, including the Master of Arts degree (M.A.) and the Master of Science degree (M.S.), is awarded in the liberal arts and sciences for advanced scholarship in a subject field or discipline and demonstrated ability to perform scholarly research. A second type of master's degree is awarded for the completion of a professionally oriented program, for example, an M.Ed. in education, an M.B.A. in business administration, an M.F.A. in fine arts, an M.M. in music, an M.S.W. in social work, or an M.P.A. in public administration. A third type of master's degree is awarded in professional fields for study beyond the first-professional degree, for example, the Master of Laws (LL.M.) and Master of Science in various medical specializations.

Part-time enrollment: The number of students enrolled in higher education courses with a total credit load of less than 75 percent of the normal full-time credit load.

Personal income: Current income received by persons from all sources minus their personal contributions for social insurance. Classified as "persons" are individuals (including owners of unincorporated firms), nonprofit institutions serving individuals, private trust funds, and private noninsured welfare funds. Personal income includes transfers (payments not resulting from current production) from government and business such as social security benefits, military pensions, and so forth, but excludes transfers among persons.

Postbaccalaureate enrollment: The number of graduate and first-professional students working toward advanced degrees and students enrolled in graduate-level classes but not enrolled in degree programs. See also *graduate enrollment* and *first-professional enrollment.*

Private institution: A school or institution that is controlled by an individual or agency other than a state, a subdivision of a state, or the federal government; that is usually supported primarily by other than public funds; and the operation of whose program rests with other than publicly elected or appointed officials.

Property tax: The sum of money collected from a tax levied against the value of property.

Public school or institution: A school or institution controlled and operated by publicly elected or appointed officials and generally deriving its primary support from public funds.

Pupil–teacher ratio: The enrollment of pupils at a given period of time, divided by the full-time-equivalent number of classroom teachers serving these pupils during the same period.

Revenues: All funds received from external sources, net of refunds and correcting transactions. Noncash transactions such as receipt of services, commodities, or other receipts "in kind" are excluded, as are funds received from the issuance of debt, liquidation of investments, or nonroutine sale of property.

Revenue receipts: Additions to assets that do not incur an obligation that must be met at some future date and do not represent exchanges of property for money. Assets must be available for expenditures.

Salary: The total amount regularly paid or stipulated to be paid to an individual, before deductions, for personal services rendered while on the payroll of a business or organization.

School: A division of the school system consisting of students in one or more grades or other identifiable groups and organized to give instruction of a defined type. One school may share a building with another school or one school may be housed in several buildings.

Secondary instructional level: The general level of instruction provided for pupils in secondary schools (generally covering grades 7 through 12 or 9 through 12) and any instruction of a comparable nature and difficulty provided for adults and youth beyond the age of compulsory school attendance.

Secondary school: A school including any span of grades beginning with the next grade following an elementary or middle school (usually 7, 8, or 9) and ending with or below grade 12. Both junior high schools and senior high schools are included.

Senior high school: A secondary school offering the final years of high school work necessary for graduation.

Student: An individual for whom instruction is provided in an educational program under the jurisdiction of a school, school system, or other educational institution. No distinction is made between the terms "student" and "pupil," although "student" may refer to one receiving instruction at any level while "pupil" refers only to one attending school at the elementary or secondary level. The term "student" is used to include individuals at all instructional levels. A student may receive instruction in a school facility or in another location, such as at home or in a hospital. Instruction may be provided by direct student-teacher interaction or by some other approved medium, such as television, radio, telephone, or correspondence.

Tax base: The collective value of sales, assets, and income components against which a tax is levied.

Total expenditure per pupil in average daily attendance: Includes all expenditures allocable to per pupil costs divided by average daily attendance. These allocable expenditures include current expenditures for regular school programs, interest on school debt, and capital outlay. Beginning in 1980-81, expenditures for administration by state governments are excluded and expenditures for other programs (summer schools, community colleges, and private schools) are included.

Unclassified students: Students who are not candidates for a degree or other formal award, although they are taking higher education courses for credit in regular classes with other students.

Undergraduate students: Students registered at an institution of higher education who are working in a program leading to a baccalaureate or other formal award below the baccalaureate, such as an associate degree.

Statistical Terms

Autocorrelation: Correlation of the error terms from different observations of the same variable. Also called *serial correlation.*

Degrees of freedom: The number of free or linearly independent sample observations used in the calculation of a statistic. In a time series regression with t time period and k independent variables including a constant term, there would be t-k degrees of freedom.

Dependent variable: A mathematical variable whose value is determined by that of one or more other variables in a function. In regression analysis, when a random variable, y, is expressed as a function of variables x_1, x_2,..., plus a stochastic term, then y is known as the "dependent variable."

Double exponential smoothing: A method that takes a single smoothed average component of demand and smoothes it a second time to allow for estimation of a trend effect.

Durbin-Watson statistic: A statistic testing the independence of errors in least squares regression against the alternative of first-order serial correlation. The statistic is a simple linear transformation of the first-order serial correlation of residuals and, although its distribution is unknown, it is tested by bounding statistics that follow R. L. Anderson's distribution.

Econometrics: The quantitative examination of economic trends and relationships using statistical techniques, and the development, examination, and refinement of those techniques.

Estimate: A numerical value obtained from a statistical sample and assigned to a population parameter. The particular value yielded by an estimator in a given set of circumstances or the rule by which such particular values are calculated.

Estimating equation: An equation involving observed quantities and an unknown that serves to estimate the latter.

Estimation: Estimation is concerned with inference about the numerical value of unknown population values from incomplete data, such as a sample. If a single figure is calculated for each unknown parameter, the process is called point estimation. If an interval is calculated within which the parameter is likely, in some sense, to lie, the process is called interval estimation.

Exogenous variable: Variables for which the values are determined outside the model but which influence the model.

Exponential smoothing: A method used in time series to smooth or to predict a series. There are various forms, but all are based on the supposition that more remote history has less importance than more recent history.

Ex-ante forecast: When forecasting a dependent variable for some time period t using a model with at least one independent variable, the forecast of the dependent variable is an ex-ante forecast if the values for the independent variables for time period t are themselves not known.

Ex-post forecast: When forecasting a dependent variable for some time period t using a model with at least one independent variable, the forecast of the dependent variable is an ex-post forecast if the actual values for the independent variables for time period t are the known. Ex-post forecasts are often used in forecast evaluation.

First-Order serial correlation: When errors in one time period are correlated directly with errors in the ensuing time period. Also called *autocorrelation.*

Forecast: An estimate of the future based on rational study and analysis of available pertinent data, as opposed to subjective prediction.

Forecasting: Assessing the magnitude which a quantity will assume at some future point in time: as distinct from "estimation," which attempts to assess the magnitude of an already existent quantity.

Forecast horizon: The number of time periods into the future which are forecasted. Forecasts for next year are said to have a 1-year forecast horizon.

Function: A mathematical correspondence that assigns exactly one element of one set to each element of the same or another set. A variable that depends on and varies with another.

Functional form: A mathematical statement of the relationship among the variables in a model.

Independent variable: In regression analysis, when a random variable, y, is expressed as a function of variables x_1, x_2,..., plus a stochastic term, the x's are known as "independent variables."

Lag: An event occurring at time $t + k$ $(k>0)$ is said to lag behind an event occurring at time t, the extent of the lag being k. An event occurring k time periods before another may be regarded as having a negative lag.

Maximum likelihood estimation: A method of estimating a parameter or parameters of a population by that value (or values) that maximizes (or maximize) the likelihood of a sample.

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Mean absolute percentage error (MAPE): The average value of the absolute value of errors expressed in percentage terms.

Model: A system of postulates, data, and inferences presented as a mathematical description of a phenomenon such as an actual system or process. The actual phenomenon is represented by the model in order to explain it, to predict it, and to control it.

Ordinary least squares (OLS): The estimator that minimizes the sum of squared residuals.

Parameter: A quantity that describes a statistical population.

Projection: In relation to a time series, an estimate of future values based on a current trend.

R^2: The coefficient of determination; the square of the correlation coefficient between the dependent variable and its OLS estimate.

$\bar{R}^2$(also called the adjusted R^2): The coefficient of determination adjusted for the degrees of freedom.

Regression analysis: A statistical technique for investigating and modeling the relationship between variables.

Rho: A measure of the correlation coefficient between errors in time period t and time period t minus 1.

Serial correlation: Correlation of the error terms from different observations. Also called *autocorrelation*.

Standard error of estimate: An expression for the standard deviation of the observed values about a regression line. An estimate of the variation likely to be encountered in making predictions from the regression equation.

Time series: A set of ordered observations on a quantitative characteristic of an individual or collective phenomenon taken at different points in time. Usually the observations are successive and equally spaced in time.

Time series analysis: The branch of quantitative forecasting in which data for one variable are examined for patterns of trend, seasonality, and cycle.

Variable: A quantity that may assume any one of a set of values.

ISBN 0-16-050145-8

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United States
Department of Education
Washington, DC 20208-5650

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